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United States Patent No. 80,878 August 11, 1868,
" " 131,788 October 1, 1872.
" " 132,416 " 22, 1872
" " 169,811 Nov. 9, 1875, and

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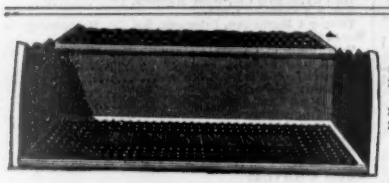

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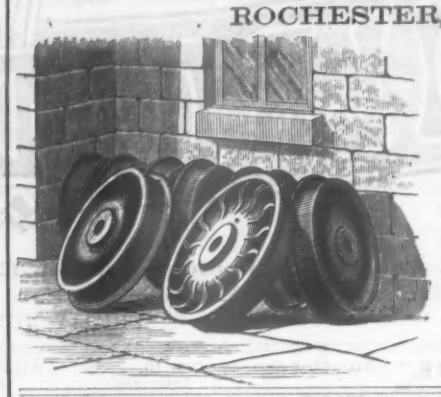

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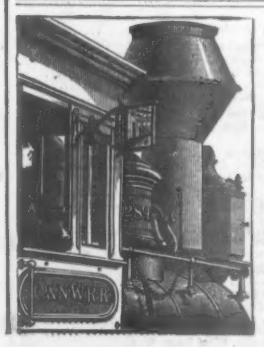

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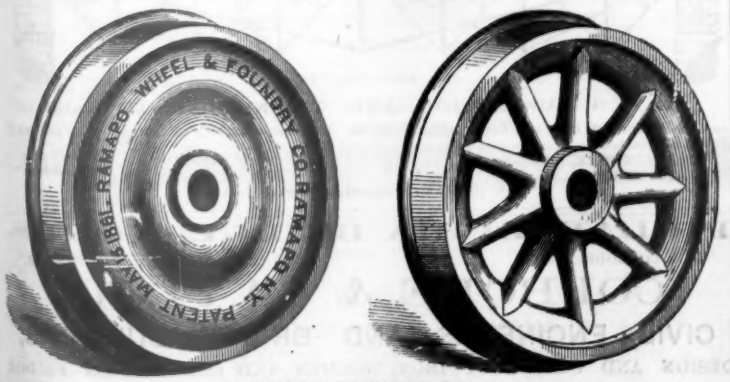

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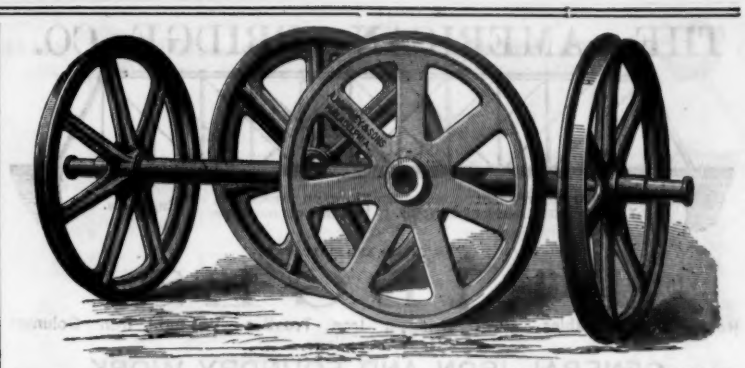

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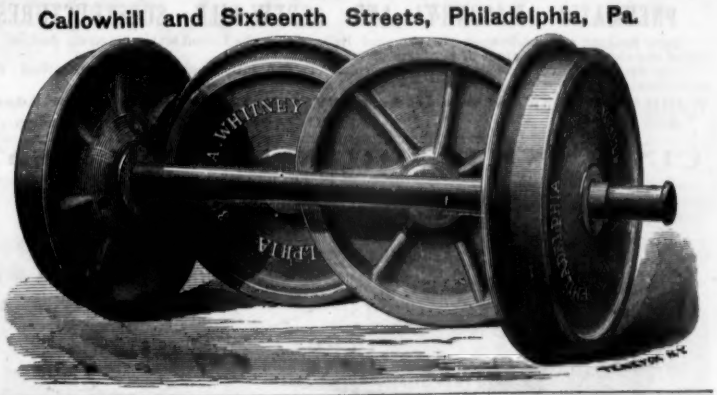

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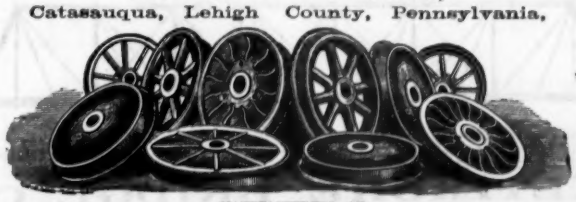

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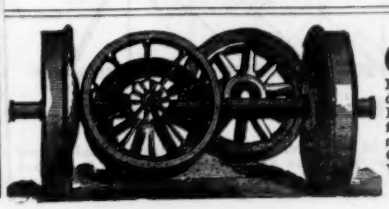

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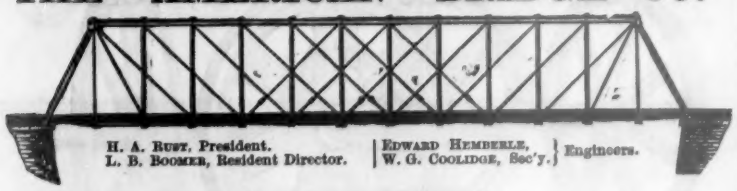

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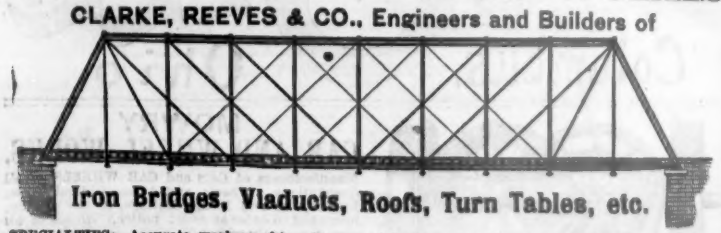

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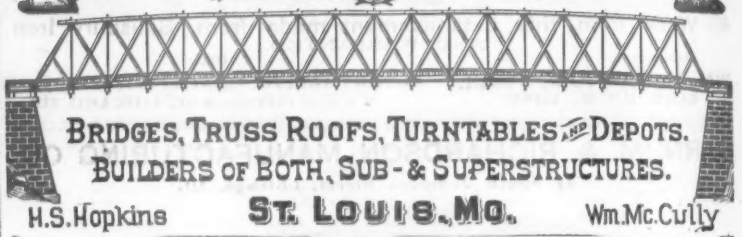

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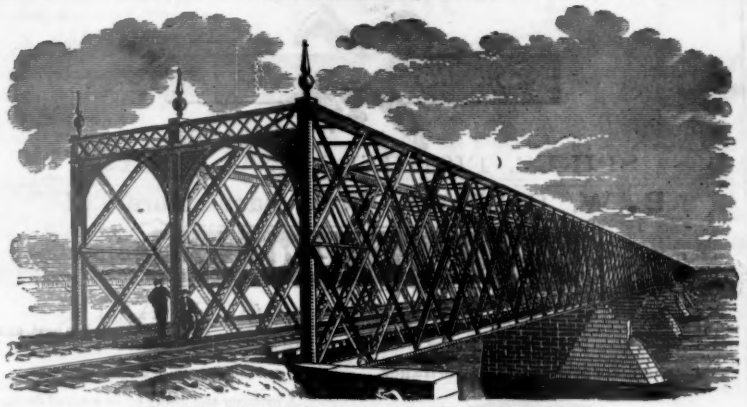

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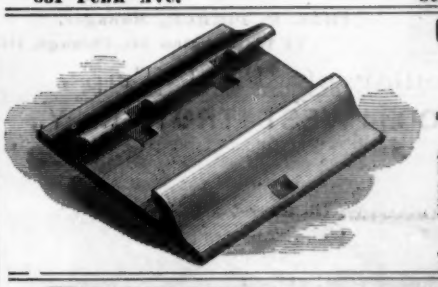

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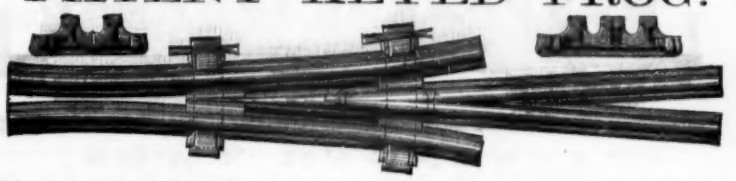

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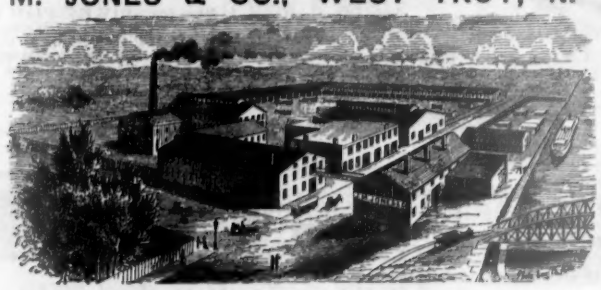

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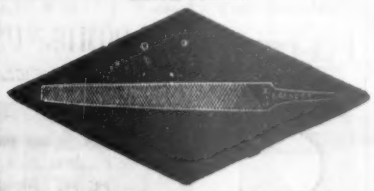

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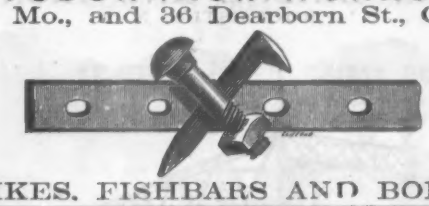

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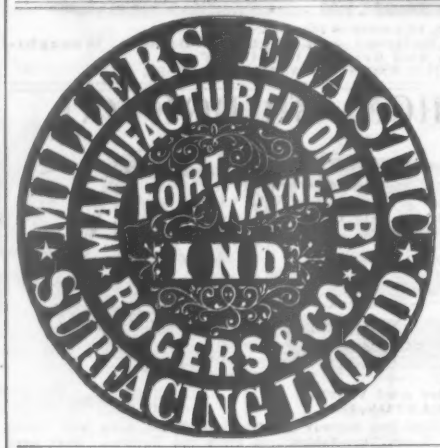

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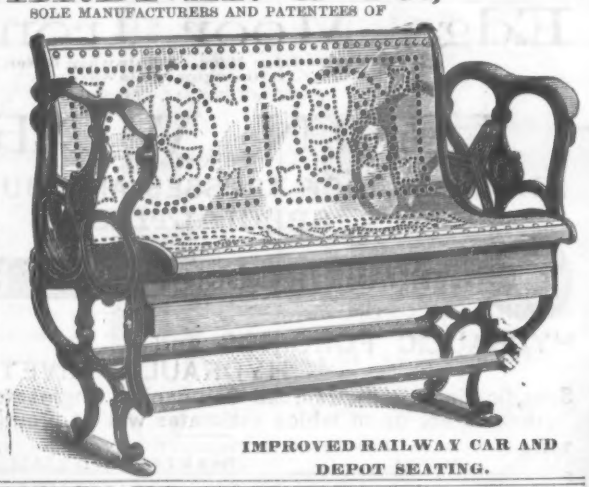

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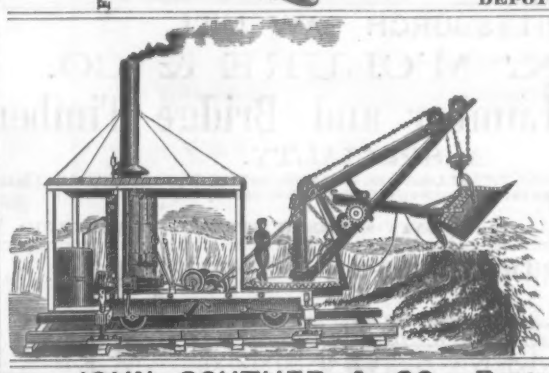

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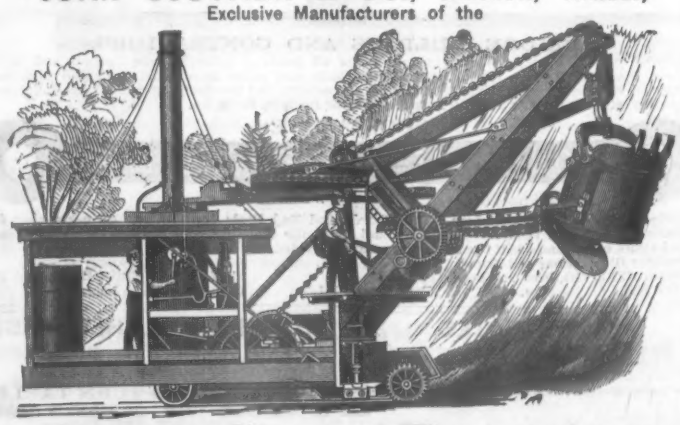

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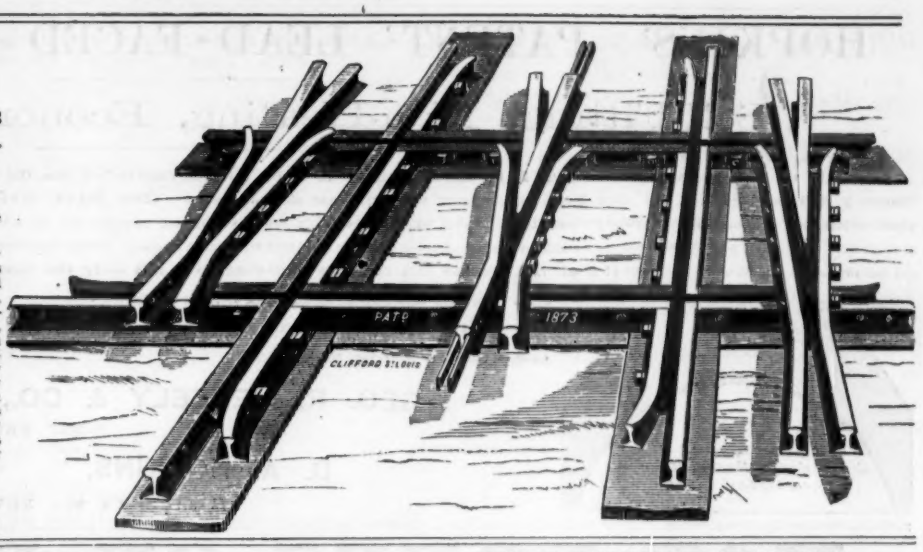

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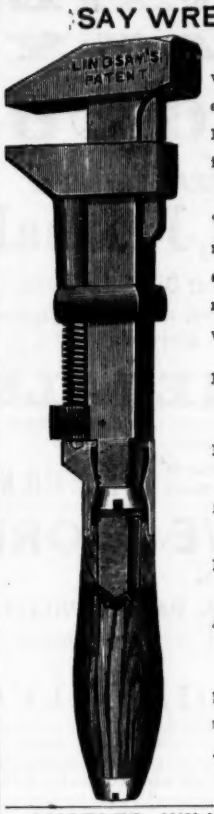

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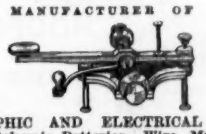

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Silver Medal at N. Y. Am. Institute Fair, 1873, and Cincinnati Industrial Exposition, 1874, and the Diploma of Honor and Grand Medal of Merit at the Philadelphia Centennial Exposition in 1876.
It Has More Good Points,
Less Complication,
More Adaptability,
Does More and Better Work, Larger Capacity,
Takes Less Power, Costs Less for Repairs
THAN ANY HAMMER IN THE WORLD.
We refer with pleasure to the N. Y. C. & H. R. R. R., who are running FOUR of our Hammers; also the Del., Lack. & W. R. R., who have six in successful operation. Send for Illustrated Circular.
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INTERLOCKING SWITCH AND SIGNAL SYSTEM.
The Toucey & Buchanan Interlocking Switch Co.
is prepared to furnish their new and original Interlocking Switch and Signal System, which insures absolute certainty and precision in directing and controlling the most intricate movements of trains, and entire security against accidents at yards, depots and other diverging points, where the arrival, departure and passage of trains is frequent.
It reduces the number of flag, switch and signalmen to a minimum, and the actual saving on the pay roll soon repays the first cost of erection.
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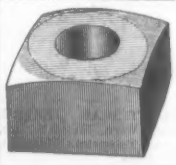

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BOILER PUNCHES.

A SPECIALTY.

RAILROAD GAZETTE

FRIDAY, JUNE 22, 1877.

Fuel Consumption.

Frequent reference has been made in these pages to the careless and unbusiness-like manner in which the consumption of fuel is conducted, or rather neglected, on various railroads. It therefore gives us pleasure to be able to present to our readers this week an engraving of the coal "pockets" or "chutes," as they are called, which are used on one of the trunk lines. Similar arrangements are also used on some other roads.

It will be seen that the arrangement consists of a timber structure or trestle work, on each side of which are receptacles or pockets, *A A*, of triangular section, elevated high enough to permit the coal to be run from them directly into the tenders by means of an apron, *B*, which is lowered so as to convey the coal from the former to the latter on opening a suitable trap door, *C*, provided for the purpose. The apron of the pocket on the left side of fig. 1 is represented in the position it occupies when lowered, and the trap door is open. In the pocket on the right side the trap is closed and the apron raised.

The pockets are arranged in two rows, with an elevated track, *D D*, on which the coal cars are run by means of an inclined plane. From the engraving it will be seen that the coal can readily be unloaded into the pockets when a car is in the position represented at *E E*. Of course any number of pockets can be arranged in this way, to suit the requirements of a road. When such pockets are located near the coal mines, a narrow-gauge track is laid on top and the mine cars are run directly from the mine to the pockets.

The method adopted for conducting the business is as follows:

At each mine there are men who weigh out and inspect the coal, placing it in pockets conveniently located on the main track, so that the engines can take it with as little delay as possible. The pockets are numbered, and the inspector charges the pockets with the amount of coal placed in them, the engineer giving a check for the coal he takes showing the number of the pocket, which enables the inspector to show on his report (which is made daily) the exact amount by weight of coal taken by each engine. These reports are forwarded daily to the general office, so that an accurate account can be made up for each engine and for the whole road. The coal is charged to the engines in tons and decimal parts of tons, not by bushels or any approximate measurements. The following is the form of receipt which is filled out and signed by the engineman when he receives coal:

.....187	187
No. Eng....No. Train.....	No. Engine,..... No. Train,.....
.....Mine.	.....Mine.
No. Chute.....	No. Chute,.....
Weight of Coal.....Lbs.	Weight of Coal,.....Lbs.
.....	.....
.... Engineer.	.....Engineer.

The part on the right side he tears off and deposits in a box from which it is collected by the fuel inspector. The other part he keeps himself for his own information.

The inspector makes up his daily report to the Superintendent's office on blanks like the following:

This, it will be observed, is a record of the information given by each receipt deposited by the enginemen during the day for which it is made. Under the head of "deductions" allowances are made for slack, dirt and other impurities. A duplicate report similar to this is made out and sent to the Master Mechanic's office.

The objection made to keeping careful and accurate fuel accounts is the cost of it, which, it is said, amounts to more or as much as the saving effected. The following statement will enable our readers to form some idea of the cost and the results of accounts kept in the manner described. The road referred to has 101 engines in use, which required in 1876 149 coal pockets, which cost about $60 each. The total amount of engine coal handled during that time was 101,554 tons, and the total cost of handling and accounting for it by the system described was $3,802, or 3.74 cents per ton.

DAILY REPORT OF COAL DELIVERED TO ENGINES.

At.....*Mines*,.....187

No. Engine...	No. Train....	Engineer.....	No. Chute....	Deductions...	Pounds Coal..

I certify that the above is correct.

.....
Coal Inspector.

To show the saving effected by it, it may be stated that it was put in operation on the first of January, 1875. In freight engines in 1874 an average of $6\frac{7}{10}$ lbs. of coal was consumed per loaded car per mile; in 1875, $5\frac{37}{100}$ lbs., or a reduction of $\frac{23}{100}$ lbs. per car per mile. This on the total number of cars moved amounted to 8,916.3 tons. The passenger engines in 1874 used $11\frac{33}{100}$ pounds per car per mile; in 1875, $10\frac{18}{100}$ lbs., a saving of $1\frac{15}{100}$ pounds per car per mile, or on the whole movement of passenger cars 1,871.5 tons, or a total saving of 10,787.8 tons. The average cost of coal, including expense of keeping accounts, handling, and all expenses of fuel department, to the company from which these figures were obtained, was, in 1875, $1.33, so that the actual saving effected by this system was $14,-347.77. Making a deduction of 7 per cent. on the cost, $8,940, of 149 pockets, and 10 per cent. for deterioration and repairs, which will amount to $1,519.80, we have a net saving of $12,-827.97. It is said, however, that the cost of handling the coal by the pockets is *more* economical than the old method of loading from platforms. We have no data from which to estimate the gain from this source. Of course on roads on which the cost of fuel is two or three times as great as that given, the saving would be a much more important item than on the road to which these estimates refer.

By keeping a careful account of the kindling wood used by locomotives, $14,053.91 was saved during the years 1875 and 1876, showing that even in small items it pays to know where the money goes.

It must be remembered, too, that this saving was effected on a road on which coal cost, including cost of handling, keeping accounts, and all expenses, in 1874, $1.83; in 1875, $1.33; and in December, 1876, $0.90 per ton.

Fig. 1.

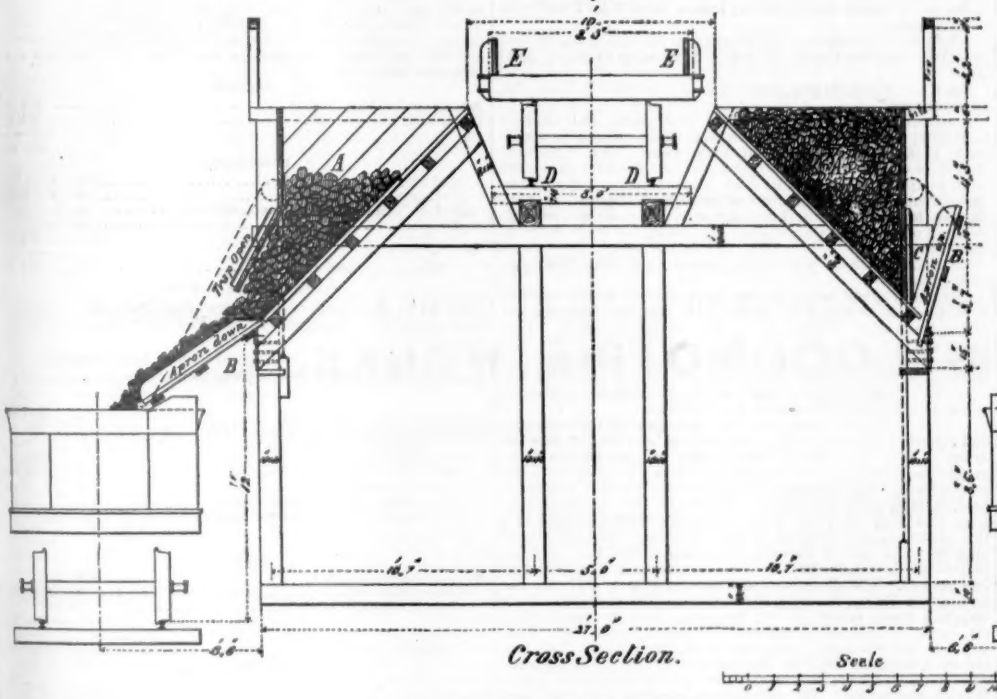
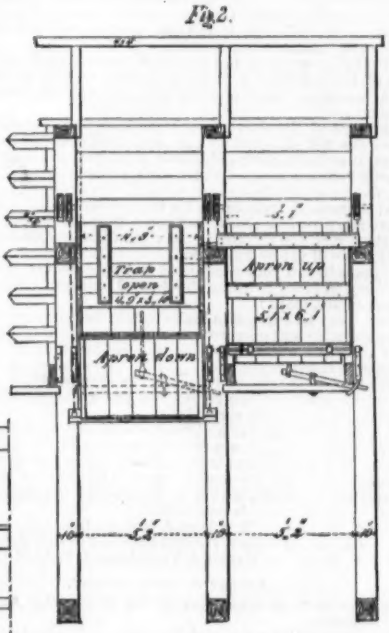


Fig. 2.



COAL SHUTES FOR SUPPLYING COAL TO LOCOMOTIVE TENDERS.

MASTER CAR BUILDERS' ASSOCIATION.

Annual Convention.

The following are the reports read at the convention at Cleveland last week:

TRAIN BRAKES FOR FREIGHT CARS:

To the Master Car Builders' Association:

MR. PRESIDENT AND GENTLEMEN: Your committee appointed at the annual meeting of the association held in the city of New York on the 14th and 15th of June last, to report upon "Train Brakes for Freight Cars," being impressed with the importance of the subject, went to work to gather all the information possible in regard to it before making this report.

The committee proposed the question, and it was discussed at length at the association's rooms in New York City last January, the representatives of four different styles of train brakes, all in successful operation on passenger cars, participating with master car builders and others in the discussion.

All of these devices have their merits, but are not free from objections. The majority of them, in the opinion of your committee, being entirely too expensive for freight cars.

Your committee also opened correspondence with different parties to obtain, if possible, some practical tests or statistical facts in regard to the matter. Failing to obtain the desired information, they deemed it advisable to prepare a circular, asking for the individual opinion of master car builders and others interested in the construction and management of freight cars; and accordingly, through our worthy Secretary, sent out between three and four hundred copies of the following circular:

"UPON TRAIN BRAKES FOR FREIGHT CARS.

"To the Members of the Master Car Builders' Association and others having charge of Freight Cars:

"GENTLEMEN: At the last annual convention the undersigned were appointed a committee to report upon this subject, but as it is a comparatively new one, *all* information in regard to it is earnestly desired, and to that end we ask the following questions, hoping to receive an early and full reply to each:

"1.—Do you think a train brake under the control of the engineer desirable on freight cars? Please give your reasons for or against it.

"2.—If an effective train brake can be produced at a cost not exceeding $25 per car, would your company be likely to adopt it for freight cars?

"3.—Do you know of any train brake in successful operation on freight cars; if so, how long has it been running, and on what road?

"4.—Have you any personal knowledge of the operation of such brakes, its effectiveness, durability and annual cost of repair? If so will you please give the particulars, and any other information that you think will assist the committee in making a valuable report."

Your committee were much gratified at the character of most of the answer received, a majority of them being from superintendents representing many miles of railroad.

In answer to the first question, "Do you think a Train Brake under the control of the Engineer desirable on Freight Cars? Please give your reasons for or against it," *all*, with *one* exception, think it desirable. And he with his usual caution thinks it *may* be, but is in doubt as to its practicability.

The following are some of the answers, verbatim, given to this question, and will serve as illustrations:

1st. "I think it very desirable, provided it is not expensive to apply or maintain; nor troublesome in coupling and uncoupling cars when doing way work at stations all along line of road."

2d. "I do think that a brake for freight trains under the control of the engineer is desirable, for the reason that it frequently happens that, were the brakes under his control, he would stop the train while the brakemen are getting *ready to stop it.*

"The brakes applied to the driving wheels of the locomotives would be a great auxiliary; it requires some time to check the motion of the locomotive without brakes on the drivers.

"I think it impossible to keep an apparatus in order on freight cars where a hose is required. Our present interchange of cars is so extensive, and as they are made common property, the hose would be off half the time."

3d. "I believe an automatic valve for freight cars would materially reduce expense account and be very desirable, because of the greater safety consequent upon placing control of the train in the hands of the engineer, who knows when brake power is most needed and how best to avert danger. The almost instantaneous and continuous application of the brakes with uniform pressure upon all the wheels in the train would greatly reduce the wear and tear of wheels and track, and would moreover materially relieve the serious strains upon couplings and fastenings, now so often broken, entailing many expensive and often disastrous results."

4th. "Yes, I think a train brake on freight cars desirable if not too expensive.

"Some of the advantages would be the prevention of collisions and consequent damage to cars, etc, etc. There would be less wear on both wheels and track, especially on descending grades, as brakes could be applied uniformly throughout the *whole* train, instead of a small part of it, as is generally the case with hand brakes, which slide and flat the wheels and wear the track.

"If a good, reliable train brake could be put on freight cars

for a sum not to exceed $25 per car, I can see no serious objections to the *first* cost, as it would probably not add more than 5 per cent. to the first cost of a box car; but I think it would add largely to the cost of repairs, unless something is invented to connect the cars much more simple and inexpensive than any device I have yet seen.'

5th. "I think it *very* desirable, because of the thorough control it would give over the train, the consequent safety and probable resulting economy. Trains can be stopped with a train brake in one-quarter to one-half the distance which is requisite with a hand-brake; and I therefore believe that with an efficient train brake fewer accidents would happen with a force of, say, one brakeman or flagman to each twenty cars, than now occur with the current practice of hand brakes and a brakeman to every eight or ten cars."

In answer to the second question: "If an effective train brake can be produced at a cost not exceeding $25 per car, would your company be likely to adopt it for freight cars?"

One answers *No*, and gives as a reason the great number of foreign cars running over their road.

The majority are doubtful. Some are confident that all the obstacles in the way can and will yet be met, and a freight train brake be produced which will commend itself to all, while others express a willingness to adopt a freight train brake when something cheap and inexpensive to maintain is presented that promises to be a success.

In answer to the third and fourth questions: "Do you know of any train brake in successful operation on freight cars; if so, how long has it been running, and on what road?"

Also: "Have you any personal knowledge of the operation of such brake, its effectiveness, durability and annual cost of repair?"

The universal response is "No."

Your committee have examined several working models of train brakes, designed for freight cars, within the last few months.

Two of them were operated from the buffer, without any hose coupling between the cars, one of them as a safety brake in case of collision, the other for common use; also a drawing of one operated in the conductor's car by a lever, or by the engineer with a cord running the entire length of the train. This device consists of a series of pulleys and a wire rope coupled between the cars.

We have also heard of several other devices, but have been unable to gain any specific information about them, either by models or drawings. One party claims that his brake is simple and cheap, and that it will not cost more than five dollars above the common hand-brake.

Probably many of the members present have seen some or all of these devices and are prepared to give the convention the benefit of their opinion and perhaps of some practical tests.

In view of the above, your committee would simply say that they are not prepared to recommend any of the train-brakes that they have examined, partly from lack of actual tests, and partly because none of them have yet attained that degree of perfection which they think requisite for a reliable, economical and *convenient* train-brake for freight-cars; although they all have more or less merit, and show that the inventive genius of the country is turning in the right direction, and we have no doubt it will yet be successful.

In conclusion your committee feel free to say that in their opinion, in order to attain the desired object two things are absolutely necessary:

1st. That an automatic brake should be so constructed as to be applicable and operative on *one or more* cars in a train without any other connection with the engine than the ordinary coupling between the cars.

Said brake should be so simple in construction, reliable in operation and inexpensive to apply and maintain, that it needs only to be seen to be appreciated.

2d. Every locomotive and tender attached to a train should be provided with a steam brake always ready for application.

The idea that the car brakes should be expected to stop the momentum of the locomotive, as well as that of the cars, is simply preposterous, wrong in theory and expensive in practice. All of which is respectfully submitted,

C. E. GAREY, New York & Harlem Railroad.
GEORGE HACKETT, Central Railroad of New Jersey.
V. D. PERRY, Hartford, Providence & Fishkill Railroad.

REPORT ON DEAD WEIGHT.

Mr. President and Gentlemen of the Master Car Builders' Association:

Your committee appointed last year on the subject of "Dead Weight in Passenger and Freight Cars" would submit a report as follows:

This, like many other questions of great importance in connection with our car construction, is very difficult to solve. The great variety of circumstances and requirements of shippers, also the various kinds of freight carried, sometimes largely running one way heavy and in the opposite way quite light, sometimes of a heavy character, requiring but small amount of room but great strength, at other times very bulky but light, requiring a large amount of room, but not as much strength—all these different circumstances have to be met, and as the principal idea involved is economy, the question is, How shall we build our cars so as to secure the greatest economical service for the least expense in construction and use? It is considered by some that the best and only way to secure in our freight-car business a greater service or a larger proportion of paying freight for the amount of tons hauled, is to increase the size and carrying capacity of our cars above what we have commonly built. This is an open question, and perhaps would have to be answered differently in different localities. Your committee do not feel qualified to advise or recommend a change. We would say, however, that in very many cases timber and iron are used in excess of the demand for strength, and by a more careful selection of timber as to quality, and a more careful judgment of its proportions to the service it has to perform, and the same care in regard to the iron used, with good, careful workmanship, would secure much lighter and equally serviceable cars for strength and use. In regard to passenger cars the above is equally true. We have been accustomed to follow after those before us without much investigation or careful examination as to the requirements of different parts of construction, and use to a great extent the same sizes of timber and bolts and rods as those we learned from. Your committee is satisfied that generally, in passenger construction particularly, and perhaps, too, in freight cars, we have used both timber and iron much larger than necessary in many parts, and perhaps not sufficient in others; but in the main, if we were careful to select good, sound and strong timber, and good quality of iron for our frames, we should secure equally good structures with much less weight. It also largely depends upon proportion and good workmanship. For instance, our window-posts have formerly been used two inches thick, or one and three-quarters at least. No one for years thought of using less, but now we know of quite a large number of cars—large ones, too—with the window-posts only 1¼ and some 1⅛ thick that are doing equally good service as those thicker. Take the roof carlines: all thought it wrong and dangerous to use less than 1¾ and 2 inches thick, but now many use them only an inch thick, and the iron carline used to support the monitor roofs was 2 by ⅝ iron, and we have ascertained by inquiry and experience that, with all the parts in proportion, 2 by ⅝ is sufficient; also in our inside works, where strength is not so important, select wood that is as slight as possible. One of the main things to keep in mind in all construction, is to place our timbers of all kinds so that it is strong enough in the direction of the strain, and reduce the thickness as much as it will bear and do the work required of it. In conclusion, discard all unnecessary timber; use skeleton construction in all places possible, and by careful study your committee are satisfied that a strong car can be built much lighter than many now in use on our roads. Your committee would not advise to materially lighten the bottom timbers where the greater shocks and strains come, but above the sills an excess of lumber and iron has been used, and in many cars even in the bottom work, and yet, owing perhaps to an unwise adjustment or proportion, the car is not as strong to resist concussion as lighter sills, but of better proportions.

REPORT ON SUBSTITUTING IRON FOR WOOD AND STEEL FOR IRON IN CAR CONSTRUCTION.

Mr. President, and Members of the Master Car Builders' Association:

Your committee appointed at the annual convention held in the city of New York, June, 1876, and to which was referred the subject of substituting iron for wood and steel for iron in car construction, beg leave to report as follows:

A circular was prepared by your committee, a copy of which is herewith annexed, and about 250 were sent out. Seven replies have been received. We wish in this public manner to thank the brethren who responded, some of them with great care, to all the eleven questions of your committee. Did time permit we would read the replies entire, but as that cannot be, we will give you in condensed form the substance of all the replies received.

Question No. 1.—"Which do you prefer, steel or iron, for truss or other rods in a car body? and please give your reasons for preference.'

A large majority prefer iron. Some specify No. 1 charcoal, or an iron that will show 60,000 lbs. tensile strength to the square inch; others speak of open hearth steel as tougher and denser, but too expensive.

A quality of steel could doubtless be made that would give equal strength, with less size and weight than iron.

No. 2.—"Which do you prefer, wood, iron or steel body bolsters? and please state your reasons."

A majority prefer iron; some think good, tough, seasoned white oak good enough, and some think steel would be likely to break with a sudden shock; but none have tried it. One describes a double iron bolster for passenger cars which has given excellent results. One says an iron bolster will outlast twenty wooden ones, and will maintain the centre bearing.

No. 3.—"Which do you prefer, iron or steel bolts? and give your reasons."

All prefer iron; some specify charcoal iron; some suggest that good iron is better than poor steel. None seem to have tried steel.

No. 4.—"Which do you prefer, iron or steel wheels? and give your reasons."

A majority prefer iron; one thinks steel safer and cheaper than iron; one is trying four pairs steel wheels which have now made 15,000 miles and show but little wear. One complains that steel wheels split in the tread, and are far more expensive than iron; that railroads will show wisdom by encouraging improvements in the manufacture of iron wheels, instead of buying the lowest-priced and consequently poorest iron wheels that are offered, and then charge the results of their folly to iron wheels.

No. 5.—"Which do you prefer, iron or steel axles? and give your reasons."

A majority prefer steel, one recommends open hearth steel as more likely to be free from cracks, and suggests that the low price of iron axles hinders the making of them perfect. Iron axles are said by one to run with cooler journals. Another claims that steel runs coolest. Some prefer steel because its stiffness prevents crystalization, and the axle can be lighter.

No. 6.—"Which do you prefer, wood, cast-iron, wrought-iron, or steel-brake shoes? and give your reasons.

A majority prefer cast-iron; one specifies chilled cast-iron and reports excellent results; one objects to wrought iron because it cuts steel wheels; one speaks of good results from malleable iron; one recommends cast-iron for being easy on steel wheels. We herewith submit the results of a test made by J. B. Hill, of the Erie Railway. Feb. 14, 1877, he applied to a car in a local train one pair of cast-iron shoes, weight 32½ lbs. each; one pair of wrought and cast-iron combined; weight 31⅛ lbs.; one pair of wrought iron, weight 34⅛ lbs.; and one pair of steel, weight 30 lbs.—all made as near as possible of one pattern. The shoes were all removed June 1, 1877, the car having run during the trial 10,860 miles. The cast-iron shoes weighed when removed 22½ lbs. each; loss in weight, 10¼ lbs. each. The wrought and cast combined, 27 lbs. each; loss, 4⅛ lbs.; the wrought iron weighed 31⅛ lbs.; loss, 3 lbs.; and the steel weighed 28½ lbs., having lost 1½ lbs. The percentage of loss was much less on the steel and wrought-iron shoes than on the others. The wheels were carefully inspected, and no perceptible difference was found in them.

No. 7.—"Which do you prefer, iron or steel screws? and give your reasons."

A majority prefer iron. Some have not tried steel. One says steel screws twist off: another says steel are fifty per cent. stronger than iron. One says iron do better when the heads touch iron than do steel in that condition, and also complains of the roughness of annealed steel screws. One says iron screws are as good as steel and cheaper; another says steel screws are cheaper than iron, that he has used steel for a year past, has not found one imperfect screw, and therefore recommends them.

No. 8.—"Which do you prefer, iron or steel nails, and why?"

A majority seem never to have used steel nails. One prefers steel because they are lighter and stronger, and as cheap as iron. Another gives the following result of an experiment with steel nails compared with iron. "Having received some samples of steel nails with a request to try them, I procured the hardest piece of maple I could find, and had no difficulty in driving every steel nail to its head, while it was impossible to drive a cut nail more than half-way before it would bend or break. In order to test further the economy of these nails—the price being fifty cents per keg more than iron—the table below gives the result of "the returning board:"

4d.	Iron nails,	260	to lb.	Steel do.	208	to lb.
6d.	"	145	"	"	142	"
8d.	"	90	"	"	80	"
10d.	"	62	"	"	59	"
12d.	"	47	"	"	36	"
20d.	"	28	"	"	20	"
40d.	"	13	"	"	13	"
6d.	finish'g iron nails,	192	to lb.	"	188	"
8d.	" "	110	"	"	92	"
10d.	" "	84	"	"	70	"

And he further adds: "It is my opinion that steel nails can be made lighter than iron, and I cannot understand why they should not be as cheap as iron."

No. 9. "What portions of a car now made of wood could, with advantage, be replaced with iron?"

But few replied to this question. One suggested body bolsters, and all the truck except the swing bolster. Another says body transoms. An iron truck of I beams, riveted to iron ends, has been recently patented, and is highly spoken of by some.

No. 10. "What portions of a car now made of iron could, in your judgment, be replaced with steel?"

One thinks carlines of passenger cars, if made of steel, would be more rigid than of iron. Another suggests that body bolsters, if made of steel, could be lighter, and, perhaps, in the end, be as cheap. Some think iron axles should be replaced by steel, to secure best results. Some are using steel equalizers with great satisfaction and confidence as to final results.

No. 11. "Have you substituted, in car construction, iron in place of wood, or steel in place of iron? If so, where, and with what results?'

One names iron for wood in body transoms, and steel in place of iron for equalizers. Another mentions iron for wood in body bolsters, and iron rods for braces in place of wood, but prefers wood instead of iron for coach-step stringers, as iron rusts out quickly. Another has adopted ferro-steel (galvanized) in place of galvanized iron for coal-boxes, smoke-jacks, etc., etc. It gives better satisfaction than iron, can be seamed and flanged without cracking, and costs less than iron.

Your committee has corresponded with the La Mothe Manufacturing Company, and submit herewith, for your inspection, cuts showing the manner of building their iron and steel cars.

We have now presented to you in condensed form all the information we have been able to get on this subject. The conservative character of master car-builders appears very distinctly in the answers received. They evidently do not believe in a thing merely because it is new. Steel and strength are not synonymous terms with them. They are not inclined to change unless thoroughly convinced of a decided advantage sure to be gained. Yet even this excellent quality may be carried too far. Your committee are satisfied that the substitution of iron for wood and steel for iron in car construction is a subject of first-class importance and merits far more attention than it has yet received. W. R. DAVENPORT, J. B. HILL.

SUBJECTS FOR NEXT CONVENTION.

Messrs. W. R. Davenport, John Kirby and F. D. Adams, the committee on this subject, reported as subjects for discussion at the next convention the following:

Train Brakes for Freight Cars. A Standard Length of Drawbar, from face of front follower to centre of coupling-pin hole.

The committee recommended that more time be devoted to the hearing and answering of questions proposed by members present, and less time to lengthy reports. They also urged upon members the importance of experiments and careful tests, that exact and reliable information may be furnished to the convention. They further advised that the committee on "Improvements in Cars" report the best sizes of wheels for passenger and freight cars.

REPORT OF COMMITTEE ON ROOMS.

This committee reported that the rooms at No. 113 Liberty street, New York, had been kept open to railroad men and others wishing to attend. Monthly meetings had been held during the autumn, winter and spring, generally well attended, at which interesting discussions were had. The receipts and expenses were:

RECEIPTS.

Balance on hand last report	$31 64
Receipts for 1876 and 1877	774 40
	$806 04

EXPENDITURES.

Rent of rooms	$660 00	
Reporting meetings	29 00	
Stationery, printing, postage and cards	35 50	
Register	30 50	
		754 50
Balance on hand June 12		$51 54

TREASURER'S REPORT.

Owing to the death of Mr. Aaron Steinbach, the Treasurer, this report was presented by the Finance Committee, as follows:

NEW YORK, June 12, 1877.

The Master Car Builders' Association in account with Treasurer:

DEBIT.

Due Treasurer on last report	$111 43
Paid for room for annual meeting, 1876	25 00
" reporting proceedings	50 00
" printing annual report, 1876	104 76
" " circulars, etc	24 75
" engraving	7 25
" postage stamps, envelopes, etc	26 25
" cartage, etc., for annual meeting	4 75
	$354 18

CREDIT.

By annual dues received	$265 00	
" other collections	88 70	
" sales of annual reports	14 85	
		368 55
Cash on hand		$14 37

SECRETARY'S REPORT.

CINCINNATI, O., May 15, 1877.

To the American Railway Master Mechanics' Association:

GENTLEMEN OF THE CONVENTION: I have again the pleasure of submitting for your consideration a detailed statement of membership, financial condition and such other information as properly belongs to the Secretary to furnish.

Membership.—Within the year eight new members have joined the association. One of this number, Mr. Dudley, was elected an associate member at the ninth annual meeting; 17 members have resigned, and 21 have been dropped from the roll of membership for delinquency in payment of dues. With these changes the association numbers 198 members.

Annual Reports.—By order of the General Supervisory Committee, the Secretary prepared the manuscript and procured the printing of 1,500 copies of the ninth annual report for general distribution. Three copies have been sent to each member of the association, and as many extra copies as members have applied for. Twenty-five copies have been sent to each of the locomotive works in the United States, and 42 to other parties, making the total number distributed 1,150. One complete set of reports has been sold by the Secretary. There is now on hand 350 of the ninth, and 1,836 miscellaneous reports, about equally divided, except the fourth, which is out of print. The number on hand includes those at the office of the *Railroad Gazette.*

Financial.—The receipts of the association have been as follows:

Assessments	$1,600 00
Initiation	6 00
Rogers Locomotive and Machine Works	25 00
Schenectady Locomotive Works	25 00
Portland " "	25 00
Baldwin " "	25 00
Reports sold by Secretary	16 60
W. W. Evans, donation	7 00
Col. Titus' bill for engraving	22 50
Total	$1,752 10
Disbursements:	
Secretary's salary	$750 00
Reporter's bill	85 00
Lease of vault for one year	15 00
Paid on printer's bill for 1875	339 91
Paid " " " " 1876	475 00
Bill of J. H. Setchel for postage	80 25
Total	$1,741 16
Amount due from members in good standing	$452 00
Amount due on bill of Wilstach, Baldwin & Co	$373 85

Boston Fund.—January 6, 1877, the interest on the three $1,000 bonds of the association amounted to $312.56, and according to the instruction of the association the Trustees expended $231.50 for two $100 10-40 bonds, paying therefor

$115.75 each, leaving a balance of $81.06. This, together with the March interest on the same, $10.40, leaves a total of $91.46 unexpended and makes a total of $3,937.96 invested. The bonds are deposited in a box rented for that purpose of the Safe Deposit Co. in the City of Cincinnati. Accompanying this report is attached the bill of sale for the two $100 bonds, together with the circular letter to the General Supervisory Committee giving full accounts of the disposition of the interest in the purchase of these bonds and their unanimous approval thereon. I have the pleasure to state that the Association are indebted to Prof. R. H. Thurston, of Stevens Institute of Technology, for the Report of the Commissioners of the United States to the Vienna Exhibition in 1873, and also to the Franklin Institute for their valuable *Journal* for the past year. Very respectfully submitted,

J. H. SETCHEL, Secretary.

The Railroads of the United States in 1876.

[From advance sheets of "Poor's Manual of Railroads of the United States for 1877-1878."]

Though the past year has been one of great depression in the railway, as in all the other interests of the country, the aggregate results of their operations have been fairly satisfactory. The number of miles of railroad opened during the year 1876 was 2,856, against 1,919 miles for 1875, and 1,911 miles for 1874. The excess of miles built, as compared with the two preceding years, is due almost entirely to the great activity in the Southern Pacific lines, and in narrow-gauge lines in Ohio, Texas and Colorado. No new lines of any considerable magnitude have been undertaken. The tables which follow will show in what sections there have been any considerable increase.

The gross earnings of all the roads whose operations have been reported, have equaled $497,257,959, against $503,065,505 for 1875. The general result of the operations of our railroads for the last six years is shown in the following statement:

Statement showing Miles of Railroad, Capital Account, Earnings, etc., for six years.

Year.	Earnings.			
	Gross.	Net.	From Freight.	From Passengers.
1876	$497,257,959	$186,452,752	$361,137,376	$136,120,583
1875	503,065,505	185,506,438	363,960,234	139,105,271
1874	520,466,016	189,570,958	379,466,935	140,999,081
1873	526,419,935	183,810,562	389,035,508	137,384,427
1872	465,241,055	165,754,373	340,931,785	132,309,270
1871	403,329,208	141,746,404	294,430,322	108,898,886

Year.	Miles Operated.	Capital and Funded Debt.	Dividends Paid.
1876	73,508	$4,468,591,935	$68,039,668
1875	71,759	4,415,631,630	74,294,208
1874	69,273	4,221,763,594	67,042,942
1873	66,237	3,784,543,034	67,120,709
1872	57,323	3,159,423,057	64,418,157
1871	44,614	2,664,627,645	56,456,681

It will be seen by the above that, while the gross earnings have fallen off $5,807,546, the net earnings have increased $946,314. This increase has been due chiefly to the great economies practiced in conducting the operations of the roads. Whether these economies have been at the expense of the condition of the roads the future must determine. The introduction of steel rails has doubtless been a considerable element in the cheaper ratio of operating expenses.

The present is the tenth annual issue of the manual, covering the period from 1867 to the present time. This period embraces the years of greatest activity in all enterprises connected with railroads since their first opening in 1830. Its publication, therefore, naturally suggests a comparison between the condition of our railroads and the general business of the country during those ten years.

There were in operation, at the time of the issue of the first Manual for 1868-69, being for the year ending Dec. 31, 1867, 39,244 miles of railroad, of which 3,938 miles were in New England, 9,552 in the Middle States, 15,226 in the Western, 10,097 in the Southern, and 431 in the Pacific States. The Union and Central Pacific railroads had not been completed. There was not a mile of railroad in Utah, Dakota, Colorado, Washington Territory or the Indian country, where now are 2,136 miles; and in all the territory west of the Mississippi River and east of the Pacific slope, where now are 17,576 miles, supplying the wants of a population of 7,120,000, there were then but 3,968 miles of railroad, with a population of 4,205,000.

Arranged by groups, the increase of railroad mileage and population is shown in the following table:

Table showing the increase of Railroads and Population in the United States for ten years, 1867-1876.

	Miles of R. R.		Increase.	
	1876.	1867.	Miles R. R.	Per cent.
New England States	5,694	3,938	1,756	44.59
Middle States	15,085	9,555	5,530	57.87
Western States	37,055	15,226	21,829	143 37
Southern States	16,676	10,126	6,550	64.68
Pacific States	2,960	431	2,529	586.78
Total, United States	77,470	39,276	38,194	97.25

	Population.		Increase.	
	1876.	1867.	Number.	Per c't
New England States	3,806,850	3,348,000	458,850	13.70
Middle States	11,405,000	9,930,000	1,475,000	14.85
Western States	15,835,000	11,985,000	3,850,000	32.12
Southern States	12,410,000	10,440,000	1,970,000	18.87
Pacific States	1,280,000	650,000	630,000	96.92
Total, United States	44,736,850	36,353,000	8,383,850	23.06

It will be seen by the above that, while in the last ten years the railroad mileage has nearly doubled, the increase in population has been only 23 per cent., the railroads having increased more than four times as rapidly as the population. The number of inhabitants to a mile of railroad in 1867 was 925, while in 1876 it was only 577. The experience of the New England States demonstrates that, to enable railroads to be operated at a profit, a population of at least 850 to a mile of railroad is necessary in this country. The history of the railroads in the Western States also proves it. In the earlier days of the system, nearly all the lines built in the Western States brought handsome returns to their builders; but with the increasing profits came a still greater increase of railroads. The success which attended them led to an enormous development of the system. The methods of building were also changed, and the depression which has attended their operations during the last three years is largely owing to the undue stimulus which the first successes created. In the Western States, in 1867 there were 787 inhabitants to a mile of railroad; in 1876 there were but 427 inhabitants to a mile. The inevitable result has followed, and that result cannot be overcome until the population shall again increase to the necessary proportion.

In the first issue of the Manual, in 1867, this result was clearly foretold, although the fact has exceeded the anticipation, both in time and amount. We then said: "The annual mileage of railroads is likely, for some time to come, to exceed in ratio the increase of population. From 1870 the increase of the latter may be estimated at 1,000,000 annually; while the number of miles of railroad constructed will probably equal 2,000 annually. Their construction will be prompted by consideration of the advantages to be derived from them in promoting the industries, and in facilitating the social intercourse of the people rather than by any direct income they may yield."

The statement concerning population and the income of our roads has been verified; but in respect of the increase of railroads constructed, instead of 2,000 miles a year, we have had since 1870 a yearly average of over 4,000 miles, compressing into six years what, under the circumstances, seemed extravagant for twelve years, and thus giving us a growth of population and resulting business of only 6,000,000, instead of 12,000,000 people, as then estimated.

Since 1854 there has been an increase in railroad earnings of 50 cents per capita per annum. The net earnings for 1876 were $497,257,959. Had the progress of population kept pace with that of railroads—or rather had we restrained the progress of our railroads to the progress of population—the net earnings would have exceeded the present amount by over $25,000,000, or equal to a revenue of 6 per cent. on $420,000,000—sufficient to have saved from default the greater part of the more important lines which have been obliged to forego the payment of interest on their funded debt.

The earnings from transportation of freight, mails, etc., for the year 1876 were upon 197,082,000 tons of freight. As compared with the previous year, the tonnage transported shows an increase of 6,072,000, while the freight earnings show a decrease of $2,822,858. This decrease is wholly due to the great reduction in the rates of transportation. This reduction has been steadily going on for the last five years. In Massachusetts—which presents a fair average for all New England—the reduction has been from 3.11 cents per ton per mile in 1871 to 2.04 per ton per mile in 1876, while the quantity of freight moved has increased from 8,934,104 tons in 1871 to 11,327,502 tons in 1876. In Ohio, which also presents a fair average for the Western States, the reduction has been from 1.82 cents per ton per mile in 1871 to 1.12 per ton per mile in 1876, while the amount of freight moved has increased from 18,554,340 tons in 1871 to 29,348,799 tons in 1876. In New York, which fairly represents the Middle States, the earnings per ton per mile have decreased from 1.77 cents in 1871 to 1.19 cents in 1876, while the freight moved has increased from 14,174,544 tons in 1871 to 22,891,828 in 1876. The results are shown in the following table:

	Tons moved.			Rate per ton per mile in cents.		
	1876.	1871.	Increase.	1876.	1871.	Decrease
Massachusetts	11,327,502	8,934,104	2,393,398	2.04	3.11	1.07
New York	22,891,828	14,174,544	8,717,284	1.19	1.77	0.58
Ohio	29,348,799	18,554,340	10,794,459	1.12	1.82	0.70
Total	63,568,129	41,662,988	21,905,141	1.23	1.94	0.71

At the same ratio of decrease throughout the country (36.6 per cent.), the earnings from freight transportation are less by more than $132,000,000, than they would have been had the rates of 1871 been maintained. Since that time, $2,000,000,000 have been invested in railroads in the United States, and 25,000 miles of railroad constructed. Yet with this enormous reduction in the rates of transportation, the railroads have yielded for 1876 a net return of over 3 per cent. on their capital.

The growth of our railroad system, in all its branches, in the last ten years, is shown in the following comparative table of railroads whose operations were reported, compiled from the first and the present issues of the Manual.

Statement showing Mileage, Cost, Operations, etc., of Railroads in the United States, for the years 1867 and 1876.

	1876.	1867.	Increase.	Inc. p. c.
Miles of railroad	73,508	30,000	43,508	145
Capital stock	$2,248,358,375	$756,223 000	$1,492,135,375	197
Funded debt	2,220,233,560	416,658,000	1,803,575,560	433
Total capital account	4,468,591,935	1,172,881,000	3,295,711,935	281
Gross earnings	497,257,959	334,000,000	163,257,959	49
Operating expenses	310,805,207	228,700,000	82,105,207	36
Net earnings	186,452,752	105,300,000	81,152,752	77
Dividends	68,039,668	32,125,000	35,914,668	112
Cost per mile of railroad	53,558	39,096	14,462	37
Gross earnings per mile of railroad	6,764	11,130	*4,366	39*
Net earnings per mile of railroad	2,534	3,510	*976	27*
Per cent. of dividends to capital	3.03	4.25	*1.22	29*

*Decrease.

It will be seen that while the gross earnings show a decrease of $5,807,546, as compared with the preceding year, the net earnings show an increase of $946,314. The decrease in freight earnings was $2,822,458, as compared with 1875, while the falling off in passenger receipts is $2,984,688.

The decrease in dividends, as compared with 1875, is $6,254,540.

Classifying the States by their geographical position as usual, it will be seen that the gross earnings for the New England States were $45,760,993, against $48,328 922 for 1875, $50,064,774 for 1874, and $51,676,688 for 1873. Of these earnings $25,244,778 were received for transportation of freight, mails, etc., and $20,516,215 for the transportation of passengers. The net earnings were $15,379,072, against $15,324,654 for 1875, and $16,713,183 for 1874. The dividends paid amounted to $7,607,973, against $8,788,040 for 1875, and $8,511,971 for 1874.

The gross earnings of the railroads in the Middle States were $177,613,407, against $175,677,418 for 1875, $186,498,438 for 1874, and $194.052,302 for 1873. Of gross earnings $130,129,542 were received for transportation of freight, mails, etc., and $47,483,865 for transportation of passengers. The net earnings were $69,382,517, against $65,609,418 for 1875, and $70,188,972 for 1874. The dividends paid amounted to $33,690,111, against $39,357,196 for 1875, and $37,600,154 for 1874.

The gross earnings of the railroads in the Western States were $186,242,832, against $206,217,654 for 1875, $214,869,477 for 1874, and $211,717,781 for 1873. Of these $142,880,621 were received for transportation of freight, mails, etc., and $43,362,211 for passengers. The net earnings were $63,912,968, against $75,604,104 for 1875, and $75,546,695 for 1874. The dividends paid amounted to $17,394,532, against $19,280,511 for 1875, and $16,605,832 for 1874. Prior to the present year, the operations of the Union Pacific Railroad were aggregated with those of the Western States. The separation makes the real diminution of gross earnings $7,138,319, instead of $20,025,178.

The gross earnings of the railroads in the Southern States were $50,743,648, against $50,399,227 for 1875, $52,259,241 for 1874, and $53,696,409 for 1873. Of the earnings, $38,865,747 were received for the transportation of freight, and $11,877,901 for that of passengers. The net earnings were $17,119,031, against $16,741,050 for 1875, and $17,269,332 for 1874. The dividends paid amounted to $1,860,351, against $1,496,906 for 1875, and $1,068,455 for 1874.

The gross earnings of the railroads in the Pacific States were $5,864,316, against $22,442,234 for 1875, $16,774,086 for 1874, and $15,276,747 for 1873. Of the gross earnings $1,727,911 were received for the transportation of passengers, and $4,136,405 for the transportation of freight. The net earnings were $2,331,325. The dividends paid were $187,701.

The earnings and expenses of the Central Pacific Railroad were included among those of the Pacific States in 1875, which explains the apparent decline in earnings. Adding those for the present year, the earnings would aggregate $24,011,260.

On the Pacific Railroads the earnings aggregated $31,033,803, of which $10,216,424 were derived from passengers, and $20,817,379 from transportation of freight, mails, etc. The net earnings were $17,033,517, and the dividends, $7,299,000.

Table showing the Mileage, Gross and Net Earnings, Freight and Passenger Earnings, and Dividends of the Railroads of the United States for four years, 1873-1876, arranged by geographical divisions:

	1876.	1875.	1874.	1873.
NEW ENGLAND.				
Miles of railroad	5,783	5,732	5,617	5,303
Earnings from passen.	$20,516,215	$21,776,893	$22,111,787	$22,358,645
Earn. from freight, etc.	25,244,778	26,552,029	27,952,987	29,310,043
" all sources.	45,760,993	48,328,922	50,064,774	51,676,688
Net earnings	15,379,072	15,324,654	16,713,183	15,061,777
Dividends	7,607,973	8,788,040	8,511,971	9,004,488
MIDDLE STATES.				
Miles of railroad	13,647	13,173	12,874	12,441
Earnings from passen.	$47,483,865	$40,772,967	$41,699,871	$42,355,230
Earn. from freight, etc.	130,129,542	134,904,451	144,798,567	151,697,072
" all sources.	177,613,407	175,677,418	186,498,438	194,052,302
Net earnings	69,382,517	65,609,418	90,188,972	69,280,585
Dividends	33,690,111	39,357,196	37,600,154	36,531,343
WESTERN STATES.				
Miles of railroad	36,753	36,058	35,639	32,973
Earnings from passengers	$43,362,211	$54,993,084	$56,783,466	$51,620,779
Earnings from freight, etc.	142,880,621	151,224,570	158,086,011	160,097,002
Earnings from all sources	186,242,832	206,217,654	214,869,477	211,717,781
Net earnings	63,912,968	75,604,104	75,546,695	72,464,212
Dividends	17,394,532	19,280,511	16,605,832	19,056,347
SOUTHERN STATES.				
Miles of railroad	13,948	13,522	13,505	13,908
Earnings from passengers	$11,877,901	$13,864,915	$14,131,291	$15,310,989
Earnings from freight, etc.	38,865,747	36,534,312	38,127,950	38,385,420
Earnings from all sources	50,743,648	50,399,227	52,259,241	53,696,409
Net earnings	17,119,03	16,741,050	17,269,332	18,133,349
Dividends	1,860,351	1,496,906	1,068,455	901,396
PACIFIC STATES.				
Miles of railroad	1,126	1,023	417	390
Earnings from passengers	$1,727,911	$1,843,207	$1,223,248	$1,175,193
Earnings from freight, etc.	4,136,405	3,737,239	1,316,124	1,237,603
Earnings from all sources	5,864,316	5,580,446	2,539,372	2,412,796
Net earnings	2,331,325	2,687,069	1,396,790	1,263,097
Dividends	187,701			
PACIFIC RAILROADS.				
Miles of railroad	2,251	2,251	2,251	2,251
Earnings from passengers	$10,216,424	10,243,956	$9,002,276	$8,641,013
Earnings from freight.	20,817,379	18,770,892	15,792,318	15,568,931
Earnings from all sources	31,033,803	29,014,848	24,794,594	24,209,944
Net earnings	17,033,517	16,614,855	14,374,742	13,648,195
Dividends	7,299,000	7,632,250	3,256,530	1,628,265

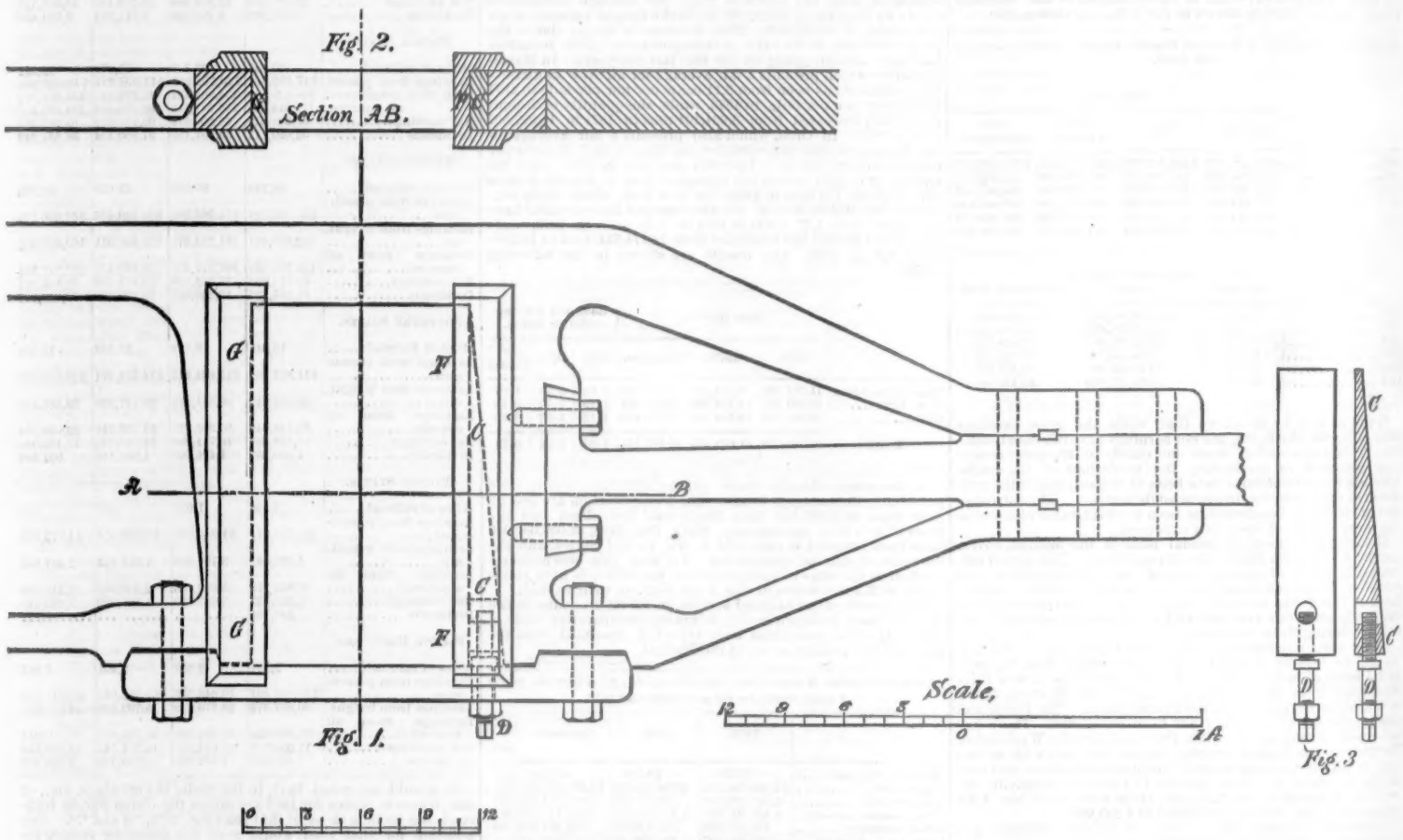
It should be noted that, in the table, the earnings, etc., of the Western States for 1876 are minus the Union Pacific Railroad, but include those of that road for 1875, '74 and '73. The addition for that road would give the following results for 1876:

Earnings from passengers	$47,669,814
" " freight	151,469,877
" " all sources	199,129,691
Net earnings	71,531,616
Dividends	20,334,132

The decline in the amount of earnings of our railroads from 1873, the year in which they reached their highest point, is by no means so remarkable as its long continuance. The depressed condition of these works only reflects that of the whole country. The agricultural interests have suffered the least, for the reason that with low prices the demand for their products in other countries is practically without limit. There are no markets to take off in the same way those of our manufacturing industries. As these were stimulated to an extraordinary extent by the paper money of the country, they have suffered in an equal degree from the decline in prices as this money rose in value—a healthy though a severe and often a dangerous process. The proposition for resumption of specie payment has necessarily exerted an extraordinary influence in reducing expenditures of all kinds by way of preparation for an event the full effect of which could only be a matter of conjecture. Whenever an apprehension is created, all business operations will be carried on with great caution, and expenditures of all kinds reduced to their minimum. The depressed state of the country is the natural result of preparation for the passage from one condition to another. The misfortune in the present case is, that its restoration does not depend so much upon the operation of the laws of trade, as upon the action of the government, which has imposed upon it an inconvertible currency which all believe must give place to a convertible one, as a necessary condition of a sound and continued prosperity. There can be no doubt that the country is well prepared to begin the work of resumption; nor that the moment adequate steps are taken in this direction it will enter upon a period of prosperity such as has never before been witnessed. All social disturbances have been quieted. The country is rapidly becoming a political as it is a commercial unit. The present period of depression has tended more than anything else to secure to our railroads complete supremacy so far as the internal commerce of the country is concerned. The reduction which has been effected in the cost of transportation has enabled them to supersede almost wholly its great navigable water lines, as well as ocean transportation between its different sections. The interchange of merchandise between the extremes of the Union, between the Gulf and the Northeastern States, is now almost wholly effected by means of these works, as is very largely that between the Pacific and Atlantic slopes of the continent. All

that is wanting, therefore, to secure their restoration to the highest condition of prosperity which they have yet enjoyed, is a definite policy in reference to the currency. It was hardly to be expected that near the close of an administration, and pending the election of a President, adequate steps should have been taken. So far as government is concerned, no further delays are to be expected. With such measures only entered upon, so that our people could count with some degree of certainty upon the future, an activity would at once manifest itself in striking contrast with the inertness which has so long prevailed. By the close of the year our population will be fully four millions greater than it was when the great crisis of 1873 took place. The rate of its increase equals at least 2¼ per cent. annually. The rate of increase of their productive capacity is at least two-fold greater. These facts show the provision that has been made for the future during the period of depression which has prevailed. The country was never better supplied with all subjects of consumption and commerce. The greater part of its industries are still actively employed.

In the mean time the depression itself has not been without its uses. It has necessarily led to the utmost economy in the management of our railroads, and to the adoption of every method by means of which cost of transportation has been reduced nearly one half within a period of five years. With an improvement in the general interests of the country, its railroads will be in a position to take advantage of it, as they have never been before. There is no interest so closely identified with all the operations of society, none so certain of support, and none which with a reasonable degree of general prosperity can be made more productive. There is every appearance that the period of the greatest depression has been passed; a depression which uncertainty and apprehension have had no small share in producing, and which must disappear so soon as these are removed.



MASON'S LOCOMOTIVE FRAME-SHOE AND WEDGE.

Mason's Locomotive Frame-Shoe and Wedge.

When locomotive frames were first made, the axle box was allowed to work or rub against the sides of the jaw. It was soon found, however, that the constant motion of the box wore away the frame to an injurious degree, and that when it was thus worn it was impossible to repair such wear. The faces of the jaws were therefore protected with shoes. These when much worn could be easily removed and replaced by new ones at comparatively small expense, or when the box became loose the shoes could be set out by placing "liners" behind them. In order to facilitate the taking up of lost motion, one or both of the sides of the jaw were made inclined and the shoes made wedge-shaped with a screw underneath (represented by *D* in the engraving), so that by moving them upward the space between them occupied by the box was contracted, and the lost motion was thus taken up. When this was done, however, the shoe could of course not extend all the way to the top of the jaw, and the friction of the box against it had to be resisted by the screw alone. The shoe thus frequently became loose and the screws were broken. Now to avoid these difficulties Mr. Mason, the well known locomotive builder of Taunton, Mass., makes one side, *G G*, of the jaw of the frame straight and with an ordinary straight shoe to fit it which extends from the top of the jaw to the bottom. The other side of the jaw is made inclined or tapered, and provided with a straight shoe, *F F*, like the one on the other side, and which also extends from the top of the jaw to the bottom. Behind the shoe *F F* a wedge, *C C*, is fitted and provided with a screw, *D*, below, by which the wedge is "set up" and the shoe "set out" so as to take up the lost motion between it and the box. By this means the wedge can be moved easily behind the shoe, while the latter is securely held in position between the top and bottom of the jaw. Fig. 3 represents a side and front view of the wedge.

It is improvements like this, in the details of locomotives, of which Mr. Mason has made so many, that have given to American locomotives much of their distinctive character, and which have much to do with their successful working.

General Railroad News.

ELECTIONS AND APPOINTMENTS.

Wilmington & Northern.—Mr. J. H. Thompson has been appointed Superintendent, in place of E. Collings, deceased. He was recently Resident Engineer on the Philadelphia & Reading road.

Yardmasters' Mutual Benevolent Association.—At the annual convention in Cleveland, O., June 13, the following officers were chosen: President, George Bedford, Cleveland & Pittsburgh; Vice-Presidents, Leroy S. Jones, Lake Shore & Michigan Southern, and Wm. Blow, Great Western of Canada; Secretary and Treasurer, Joseph Sanger, Indianapolis, Peru & Chicago; Executive Committee, E. A. Cooper, Jeffersonville, Madison & Indianapolis; A. D. Shaw, Cleveland, Columbus, Cincinnati & Indianapolis; Joseph Averill, Terre Haute & Indianapolis; W. B. Robinson, Missouri River, Fort Scott & Gulf, and J. H. Cowles, Lake Shore & Michigan Southern.

Covington, Columbus & Black Hills.—The new board of directors is as follows: A. W. Hubbard, Charles E. Hedges, Wm. L. Joy, Eli Robinson, D. E. Davenport. Two vacancies are left to be filled hereafter. The board has elected A. W. Hubbard President; D. E. Davenport, General Manager; J. S. Mecking, Superintendent.

Railroad Employes' Mutual Benefit Association.—At the annual convention in Chicago, June 13, the following officers were chosen: President, John E. Simpson, Vandalia Line; Vice-President, Elam D. Parker, Lake Shore & Michigan Southern; directors for three years, E. M. Whitlock, Chicago & Pacific; George O. Manchester, Chicago, Burlington & Quincy, and James Tillinghast, New York Central & Hudson River.

Keokuk & Des Moines.—At the annual meeting in Keokuk, Ia., June 7, the following directors (one-third of the board) were chosen for three years: S. Hale, Keokuk, Ia.; Israel Corse, W. C. Nicol, New York.

Mr. H. O. Whitney is appointed Acting General Freight Agent and James Barker Acting General Ticket Agent; their offices are in Keokuk, Ia.

Milwaukee, Lake Shore & Western.—At the annual meeting in Milwaukee, June 13, the following directors were chosen: Joseph Vilas, Manitowoc, Wis.; James H. Mead, Sheboygan, Wis.; Isaac H. Knox, St. Louis; Charles Dana, Wm. H. Guion, Henry B. Hammond, Wm. R. Hinman, Morris K. Jesup, Adam Norrie, G. Norrie, D. Parrish, F. W. Rhinelander, Samuel S. Sands, New York.

Canton Company.—At the annual meeting in Baltimore, June 13, the following directors were chosen: Abraham B. Baylis, Wm. Mertens, James B. Colgate, George F. Stone, New York; Charles J. Baker, George S. Brown, W. G. Harrison, Charles Weber, Arthur B. Brooks, Baltimore.

St. Louis, Hannibal & Keokuk.—The following officers have been elected for the ensuing year: President, S. P. Wisner; Vice-President and General Superintendent, W. W. Greene; Secretary, J. T. Jackson; Treasurer, Dr. Ely.

Utica, Ithaca & Elmira.—At the annual meeting recently the following directors were chosen: F. N. Drake, Elmira, N. Y.; H. F. Benton, Cortland, N. Y.; Franklin C. Cornell, Ithaca, N. Y.; James H. Rodbourn, Erin, N. Y.; Joseph Rodbourn, Breesport, N. Y.; D. D. Reynolds, Horseheads, N. Y.; Henry W. Poor, A. A. Marsh, H. H. Sturgis, J. B. Kiddoo, I. V. French, New York; Henry V. Poor, Brookline, Mass.; George J. Rice, London, England. The board elected Henry W. Poor, President; Joseph Redbourn, Vice-President and General Manager; M. W. Serat, Treasurer; D. S. Greenough, Secretary.

Genesee Valley.—The Rochester City Council has elected the following directors for the ensuing year: John Lutes, Johnson I. Robbins, James Brackett, E. R. Hammatt, C. B. Woodworth, Gilman H. Perkins, D. W. Powers. The road is worked by the Erie.

South Mountain & Boston.—At the annual meeting, June 5, the following directors were chosen: Wm. H. Bell, John Bunnell, James H. Dunning, G. I. Grover, John G. Hance, J. W. McCoy, C. V. Moore, J. C. Vaughn, Frank M. Ward, C. A. Wortendyke. The board elected Wm. H. Bell, President; Levi Scobey, Samuel Lanterman, Vice-Presidents; Marshal Hunt, Secretary; Isaac Wildrick, Treasurer.

Cincinnati & Muskingum Valley.—The annual meeting was held in Zanesville, O., June 12, at which the report of the directors was presented and read and the following directors elected: D. S. Gray, Columbus, O.; George W. Adams, Dresden, O.; James Buckingham, M. Churchill, Zanesville, O.; Thomas D. Messler, Pittsburgh; George B. Roberts, Philadelphia; Charles Moran, New York. The board elected Thomas D. Messler, President; C. C. Waite, Secretary and Treasurer. The road is leased to the Pittsburgh, Cincinnati & St. Louis.

Cincinnati, Hamilton & Dayton.—At the annual meeting in Cincinnati, June 12, the following directors were chosen: R. M. Shoemaker, Rufus King, Joseph H. Rogers, L. B. Harrison, Henry Lewis, J. N. Kinney, Preserved Smith, Theodore Cook, Martin Bare. The last four are new directors, replacing G. T. Steadman, H. D. Huntington, Oliver Perrin and Samuel Fosdick. The board re-elected R. M. Shoemaker, President; F. H. Short, Secretary and Treasurer; Lewis Williams, General Superintendent.

Middletown, Unionville & Water Gap.—At the annual meeting in Middletown, N. Y., May 28, the following directors were chosen: Grinnell Burt, W. H. Clark, Oscar Dunn, D. C. Dusenberry, M. S. Hayne, Henry R. Low, James N. Pronk, Asa Smith, Levi Starr, Moses D. Stivers, H. A. Wadsworth, H. R. Wilcox, W. H. Wood. The board elected Grinnell Burt President; Asa Smith, Vice-President; W. H. Clark, Treasurer; James N. Pronk, Secretary. The road is leased to the New Jersey Midland.

Wabash.—Col. Samuel A. Black is appointed Superintendent. He was formerly Superintendent of the Middle Division, Pennsylvania Railroad.

Bangor & Calais Shore Line.—At the annual meeting, June 6, the following directors were chosen: John C. Talbot, S. N. Campbell, Robert Gerry, Monroe Young, Nelson S. Allan, J. H. Crandon, L. A. Emery, J. N. Whitman, E. H. Greeley. The board elected John C. Talbot President; Monroe Young, Vice-President; J. Sargeant, Secretary and Treasurer.

Nashua & Lowell.—At the annual meeting in Nashua, N. H., May 31, the following directors were chosen: Wm. N. Bailey, Frank A. McKeon, J. G. Graves, J. W. White, Nashua, N. H.; Daniel S. Richardson, Lowell, Mass.; Wm. A. Tower, Lexington, Mass.; F. A. Brooks, Boston. Mr. E. P. Emerson was chosen Clerk and George A. Ramsdell Treasurer.

Wilton.—At the annual meeting in Nashua, N. H., May 30, the following directors were chosen: C. C. Boutelle, Wm. Ramsdell, John Reed, Solomon Spaulding, John A. Spaulding. The road is leased to the Nashua & Lowell.

Concord & Claremont.—At the annual meeting in Concord, N. H., May 30, the following directors were chosen: Onslow Stearns, Charles Minot, Charles P. Sanborn, Concord, N. H.; Dexter Richards, Newport, N. H.; Mason W. Tappan, Bradford, N. H.; Edward L. Goddard, David W. Johnson, Claremont, N. H. The road is controlled by the Concord and Northern companies.

New York Central & Hudson River.—At a meeting of the board, held June 19, Wm. H. Vanderbilt was chosen President; Cornelius Vanderbilt, First Vice-President; Wm. K. Vanderbilt, Second Vice-President; Edwin D. Worcester, Secretary; Charles C. Clarke, Treasurer.

The board then adopted a new set of rules regulating the management of the company, and the following arrangement of officers was made in accordance therewith: The First Vice-President to have general supervision of all financial matters; the Second Vice-President to have general supervision of the operating and transportation department; Mr. James H. Rutter to be General Traffic Manager; E. Clark, Jr., General Freight Agent; C. B. Meeker, General Passenger Agent; Chauncey M. Depew, General Counsel; Isaac P. Chambers, General Auditor; D. W. Tuthill, Auditor of Disbursements; John F. Desmazes, Auditor of Freight Accounts; Charles H. Kendrick, Auditor of Passenger Accounts; James Tillinghast, General Superintendent of all lines west of Albany and Troy; Zenas C. Priest,

Superintendent Eastern Division (Albany to Dewitt); George H. Burrows, Superintendent Western Division (Dewitt to Buffalo); John M. Toucey, General Superintendent of all lines south of Albany and Troy; Charles M. Bissell, Superintendent Harlem Division; Charles H. Fisher, Chief Engineer; Cornelius V. Deforest, Purchasing Agent; Leander Garey, Superintendent Car Department; Wm. Buchanan, Superintendent of Motive Power, Hudson River Division; Wm. M. Strong, Superintendent of Motive Power, Harlem Division; G. B. Van Vorst, Superintendent of Motive Power, Eastern Division; Hiram Watkeys, Superintendent of Motive Power, Western Division.

Mr. Rutter has been General Freight Agent and Mr. Chambers Secretary to the President; the others are substantially reappointments, with only the changes made necessary by the new arrangements.

New York & Harlem.—The new board has elected Wm. H. Vanderbilt President; Cornelius Vanderbilt, Vice-President and Secretary; Edward V. W. Rossiter, Treasurer.

New York & Canada.—At the annual meeting in New York, June 19, the following directors were chosen: Isaac V. Baker, LeGrand B. Cannon, W. W. Cooke, Thomas Dickson, James M. Halstead, J. C. Hartt, Abiel A. Low, R. G. Moulton, C. F. Norton, James Roosevelt, James R. Taylor, Andrew Williams, Coe F. Young. The road is leased to the Delaware & Hudson Canal Company.

Dayton & Michigan.—At the annual meeting in Toledo, O., June 19, the following directors were chosen: Theodore Cook, L. B. Harrison, Martin Bare, J. N. Kinney, Henry Lewis, J. H. Rogers, M. Shoemaker, R. M. Shoemaker, Preserved Smith. The board elected R. M. Shoemaker, President; M. Shoemaker, Vice-President; F. H. Short, Secretary and Treasurer.

Inverness Coal, Iron & Railway Co.—At the annual meeting in Halifax, N. S., June 15, the following directors were chosen: J. Y. Payzant, Lewis Carvell, Alexander Wright, W. H. Wiswell, J. Johnston, Samuel McKean, W. J. Fraser. The board elected J. Y. Payzant, President; Lewis Carvell, Vice-President; Alexander Wright, General Manager; W. H. Wiswell, Secretary and Treasurer; N. H. Meagher, Solicitor.

Somerset.—At the annual meeting in West Waterville, Me., June 13, the following directors were chosen: R. B. Dunn, Waterville, Me.; John Ayer, West Waterville, Me.; Edward Rowe, C. B. Cragin, Norridgewock, Me.; W. H. Brown, W. W. Pease, North Anson, Me.; Wm. Atkinson, O. H. McFadden, Embden, Me.; Nicholas Smith, Bingham, Me.; John Carney, Moscow, Me.; Benjamin Flint, California, Me. Messrs. Cragin, Pease and McFadden are new directors.

Shore Line.—At the annual meeting in New Haven, Conn., June 14, the following directors were chosen: S. B. Chittenden, Samuel Hemingway, Edward Ingraham, C. G. Langdon, Ezekiel H. Trowbridge, Henry L. Hotchkiss, Wilbur F. Day. The board elected S. B. Chittenden President; Samuel Hemingway, Vice-President; Wilbur F. Day, Secretary and Treasurer. The road is leased to the New York, New Haven & Hartford.

Evansville, Terre Haute & Chicago.—At the annual meeting in Terre Haute, Ind., June 12, the following directors were chosen: Chauncey Rose, Josephus Collett, W. R. McKeen, W. K. Edwards, J. E. Martin, C. Matthews, W. C. Eggleston, C. Y. Patterson, J. Roosevelt. Messrs. Eggleston and Roosevelt are new directors, succeeding Messrs. Beckwith and Benson.

Peoria, Pekin & Jacksonville.—At the annual meeting in Peoria, Ill., June 14, the following directors were chosen: John Allen, F. A. Constable, James M. Constable, George T. M. Davis, James F. Kelsey, L. H. Smith, E. L. Trowbridge. The board re-elected John Allen President; Wm. C. Phillips, Secretary.

Ohio Falls, Terre Haute & St Louis.—The first board of directors is as follows: D. F. Whitcomb, J. H. Gardner, W. H. Irwin, E. B. Whitcomb, W. H. Ongley, E. Knauffmiller, Samuel Cover. The temporary offices are in Jeffersonville, Ind.

Worcester.—At the annual meeting recently Dr. G. W. Bishop was chosen President, with the following directors: John R. Franklin, E. K. Wilson, G. W. Covington, G. W. Purnell, T. D. Purnell, G. C. Townsend, Wm. Showell, of Maryland; C. C. Stockley, of Delaware; Thomas Baumgardner, of Pennsylvania; John Bodine, A. L. McCready, Henderson Moore, New York.

PERSONAL.

Charges have been freely made that the statements made in the petition in bankruptcy recently filed by Mr. H. A. Blood, late Manager of the Boston, Clinton, Fitchburg & New Bedford Company, were false and exaggerated. Mr. Blood has begun a libel suit against the Fitchburg *Sentinel*, which published the charges. He puts his damages at $100,000.

TRAFFIC AND EARNINGS.

Coal Movement.

Tonnages reported for the week ending June 9 are:

	1877.	1876.	Inc. or Dec.	P. c.
Anthracite	463,305	156,917	Inc. 306,388	195.3
Semi-bituminous	71,225	75,815	Dec. 4,590	6.1

Bituminous and semi-bituminous tonnages not hitherto reported for the five months ending June 1 were:

	1877.	1876.	Inc. or Dec.	P. c.
East Broad Top	20,863	28,962	Dec. 8,099	27.9
Bellefonte & Snow Shoe	18,917	22,482	Dec. 3,565	15.8
Allegheny Region	83,277	82,530	Inc. 747	0.9
West Penn. R. R	80,809	84,410	Dec. 3,601	4.3
Southwest Penn. R. R.	18,118	22,392	Dec. 4,274	19.1
Penn and Westmoreland gas coal	313,584	281,302	Inc. 32,282	11.5
Pittsburgh Region, Pa. R. R.	156,799	121,954	Inc. 34,845	28.3
Totals	692,367	644,032	Inc. 48,335	7.5

The coal tonnage of the Pennsylvania Railroad for the five months ending May 31 was:

	1877.	1876.	Inc. or Dec.	P. c.
Anthracite	280,800	255,919	Inc. 24,881	9.7
Semi-bituminous	594,415	611 769	Dec. 17,354	2.8
Bituminous	643,287	634,150	Inc. 9,137	1.4
Coke	373,746	324,468	Inc. 49,278	15.2
Totals	1,892,248	1,826,306	Inc. 65,942	3.6

The Baltimore & Ohio Company has made a uniform reduction of 25 cents per ton of 2,000 lbs. on all through coal from Cumberland or Piedmont. The new rates are: Cumberland to Locust Point for shipping, $1.37 per ton; to Baltimore city stations, $1.62; Piedmont to Locust Point for shipping, $1.65; to Baltimore city stations, $1.90. The rate from Cumberland to Locust Point is 0.76 cent. per ton per mile; to city stations, 0.9 cent. per ton per mile.

The boatmen on the Chesapeake & Ohio Canal have demanded an increase of freights to $1 per ton from Cumberland to Georgetown. A number of them have already tied up their boats and quit work, and it is thought that nearly all will do the same. The rates now paid to the boatmen vary from 75 to 90 cents.

Classification Changes.

The trunk line agents announce the following changes in classifications of east-bound freights, which took effect June 6: Oil cake, hay and scrap iron is made a class with a rate 5 cents lower than present fourth-class rate, to points east of Pittsburgh and Buffalo, making it 35 cents per 100 lbs. from Chicago to New York by the present tariff. Dried apples in car-loads are reduced from the third to the fourth class (rates from Chicago to New York now 85 and 40 cents). Woven wire in rolls, manufacturers' account is made third class (wire cloth generally has been first class). Dry hides pressed in bales in car-loads are taxed at their actual weight at twice fourth-class rates (80 cents per 100 lbs.). Heretofore the third-class rate (85 cents) has been charged and a car-load charged as 12,000 lbs. In less than car-loads the same freight remains in the second class ($1.10 per 100 lbs.), as it has been. Unfinished bedsteads in car-loads are charged 5 cents more than the fourth-class rate. Heretofore in less than car-loads they have been placed in the third class. Scrap iron and hay to Pittsburgh and Buffalo and similar points are to have the same rate as grain, which is now lower than the rate on the same articles to points east of Buffalo and Pittsburgh fixed by the same tariff. The minimum weight for car-loads of hay, scrap iron, dried apples and unfinished bedsteads is fixed at 20,000 lbs.

Railroad Earnings.

Earnings for various periods are reported as follows:

Year ending April 30:				
Evansville, Terre Haute & Chicago	$209,673			
Expenses	133,449			
Net earnings	$77,224			
Earnings per mile	3,812			
Per cent. of exps.	63.17			
Year ending May 31:	1876-77.	1875-76.	Inc. or Dec.	P. c.
Union (Baltimore) R.R	$108,284	$62,541	Inc.	$45,743 73.2
Expenses	31,384	32,126	Dec.	742 2.0
Net earnings	$76,900	$30,415	Inc.	$46,485 152.9
Per cent. of exps.	29.06	51.37	Dec.	22.31 43.4
Six months ending March 31:				
Erie	$7,464,892	$8,152,922	Dec.	$688,030 8.4
Net earnings	1,910,587	1,490,733	Inc.	419,854 28.2
Per cent. of exps.	74.41	81.72	Dec.	7.31 8.9
Five months ending May 31:	1877.	1876.		
Cairo & St. Louis	$103,757	$100,082	Inc.	$3,675 3.7
Cleveland, Mt. Vernon & Delaware	148,530	150,550	Dec.	2,020 1.3
Indianapolis, Bloom. & Western	494,306	640,441	Dec.	146,135 22.8
Louisville & Nashville	2,029,770	1,922,647	Inc.	107,123 5.6
Month of May:				
Cairo & St. Louis	$23,333	$23,208	Inc.	$125 0.5
Cleveland, Mt. Vernon & Delaware	35,868	32,858	Inc.	3,010 9.1
Ind., Bloom. & Western	107,309	130,585	Dec.	23,276 17.8
Lehigh Valley	586,000	515,754	Inc.	70,246 13.6
Net earnings	300,060	155,012	Inc.	144,988 93.5
Per cent. of exps.	48.81	69.94	Dec.	21.13 30.2
Louisville & Nashville	382,574	360,342	Inc.	22,232 6.2
Paducah & Elizabethtown	24,202			
First week in May:				
Atchison, Topeka & Santa Fe	$39,819	$44,644	Dec.	$4,825 10.8
Denver & Rio Grande	12,501			
St. Louis, Iron Mt. & Southern	72,500	68,086	Inc.	4,414 6.5
Week ending June 8:				
Great Western, of Canada	$65,693	$72,689	Dec.	$7,056 9.7
Week ending June 9:				
Grand Trunk	$155,335	$175,942	Dec.	$20,607 11.7

Grain Movement.

For the five months from Jan. 1 to June 2 receipts and shipments have been, flour in barrels and grain in bushels:

	1877.	1876.	Inc. or Dec.	P. c.
Flour:—				
Lake ports' receipts	1,750,401	2,155,160	Dec. 404,759	14.1
" " shipments	1,757,638	2,317,311	Dec. 559,673	24.1
Atlantic ports' receipts	2,845,987	3,707,765	Dec. 861,778	23.2
Wheat:—				
Lake ports' receipts	7,064,051	16,056,088	Dec. 8,992,037	56.2
" " shipments	6,587,674	15,938,326	Dec. 9,350,652	58.5
Atlantic ports' receipts	3,033,716	14,764,734	Dec. 11,731,018	79.5
Corn:—				
Lake ports' receipts	29,241,480	27,296,951	Inc. 1,944,529	7.1
" " shipments	21,067,618	23,329,003	Dec. 2,261,385	9 7
Atlantic ports' receipts	35,136,575	32,882,239	Inc. 2,254,336	6.9
All Grains:—				
Lake ports' receipts	46,486,389	55,528,548	Dec. 9,042,159	16.3
" " shipments	35,190,657	47,437,052	Dec 12,246,395	25 8
Atlantic ports' receipts	46,541,381	58,020,017	Dec. 11,478,636	19.8

For the past four years the movement has been of all grains:

	1877.	1876.	1875.	1874.
Lake ports' receipts	46,486,389	55,528,548	47,210,000	67,715,433
" " shipments	35,190,657	47,437,052	30,607,467	45,583,580
Atlantic ports' receipts	46,541,381	58,020,017	41,374,920	50,208,341

The movement thus appears to have been larger this year than in 1875, though much smaller than last year, and still smaller than in 1874.

Receipts and shipments for the week ending June 2 have been, in bushels:

	1877.	1876.	Decrease.	P. c.
Lake ports' receipts	2,835,626	4,936,853	2,101,227	42.5
" " shipments	2,114,639	4,210,084	2,095,445	49.8
Atlantic ports' receipts	3,260,575	5,665,153	2,404,578	42.4

Of the lake ports' shipments, 39 per cent. were by rail in 1877, 42¾ in 1876, 39 in 1875 and 26 in 1874. Of the receipts at Atlantic ports, 47 per cent. arrived at New York, 19 per cent. at Baltimore, 12¾ at Montreal, 11¼ at Philadelphia, and 8¼ at Boston in 1877.

Chicago Lumber Traffic.

Receipts and shipments at Chicago for the five months from Jan. 1 to May 29 have been, lumber in feet, shingles in pieces:

	1877.	1876.	Inc. or Dec.	P. c.
Receipts:—				
Lumber	146,205,332	173,973,680	Dec. 27,768,348	16.0
Shingles	117,970,000	154,482,000	Dec. 36,512,000	23.6
Shipments:—				
Lumber	170,915,664	163,208,462	Inc. 7,707,202	4.7
Shingles	66,340,500	78,120,000	Dec. 11,779,500	15.1

Of the receipts, 82 per cent. of the lumber and 74 per cent. of the shingles were by lake this year, against 90 per cent. of the lumber last year.

There is no prospect that the usual quantity will be marketed this season, as the logs cut last winter were largely not got to the streams. The stock on hand seems to have been so large, however, that no difficulty is anticipated in supplying the demand—rather, quite the contrary.

THE SCRAP HEAP.

Railroad Manufactures.

The Superior Rail Mill, at Pittsburgh, owned by Harbaugh, Matthias & Owens, was sold recently under foreclosure to John M. Kennedy and Alexander Nimick for $11,664.

The Hubbard Rolling Mill, at Youngstown, O., is being prepared for a resumption of work.

Both the rolling mills at Terre Haute, Ind., are running steadily.

The New Albany (Ind.) Iron Works are running the rail mill full time and the bar mill half time.

The Pittsburgh *Manufacturer* says: "The Pittsburgh Steel Casting Co. are so busy they cannot stop while their works are being rebuilt, and they propose to work under an immense tent which they have procured for a temporary shelter for their men."

The steel works lately established at Kingston, Tenn., are, it is said, to be removed to Chattanooga and put up on an enlarged scale.

The rolling mills at Sharon, Pa., are all running, or getting ready to start up.

The National Locomotive Works of W. H. Baily & Co., at Connellsville, Pa., last week shipped a 12-ton narrow-gauge engine to the New York, Brooklyn & Sea Shore road and are building two more for the same road.

The Roane Iron Co. is running its rail mill at Chattanooga, Tenn., on contracts to re-roll iron rails for the East Tennessee, Virginia & Georgia and the Memphis & Charleston roads.

The Birmingham (Conn.) Iron & Steel Works were started up recently after a long stoppage.

Of 12 blast furnaces at Youngstown, O., eight are in blast and are doing well. Of the remaining four one is to be rebuilt and improved.

Clarke, Reeves & Co., of the Phœnixville Bridge Works, have the contract for two iron bridges for the New London Northern road. They are to replace temporary ones erected in place of those carried away by the Stafford Springs flood.

The Springfield Iron Co., of Springfield, Ill., is at work on an order for 50-lb. iron rails for the Colorado Central road.

Premiums for Burning Coal Dust.

The Philosophical Society of Philadelphia in 1866 offered a premium of $500 for a process for the successful utilization of anthracite coal dust, to be competed for under the direction of the officers of the society. A committee is now considering an application for the premium, where the process is burning the material on a perforated grate with a closed ash-pit and a steam-jet blast, the coal slack being spread thin on the grate. The latter part of the process is secured to Mr. J. E. Wootten, of the Reading Railroad, by a patent.

Parties desiring to compete for this premium are requested to communicate with Mr. Robert Briggs, No. 220 South Fourth street, Philadelphia, who will present their applications to the society.

Steam Street Car Trials.

The Baldwin steam street car is to be tried on the railroad from Westport, Conn., to Saugatuck, which is entirely a suburban or country line, connecting two villages.

The Grant steam car, mentioned last week, was tried in Paterson recently, but without much success. The motive power was sufficient, but the engine could not be kept on the track. It is to have some alterations made, which will, it is expected, obviate the difficulty. This is a separate motor, and is somewhat similar in design, we believe, to the traction engines for use on common roads, several of which were built at the Grant Works five or six years ago.

The Russian Decree Against Foreign Rolling Stock.

The Moscow correspondent of the London *Times* sends to that paper the following translation of the Imperial decree of Jan. 28 relating to equipment of Russian railroads:

"On the representation of the Minister of Finance at the Committee of Ministers, in reference to the measures to be adopted for promoting and developing the construction of locomotives and in general of railway rolling-stock in Russia, and on the recommendation of this Committee, his Majesty the Emperor was pleased to ordain, on the 28th of January this year, the following:

"1. That no further Government orders for railway rolling stock shall be given for the future.

2. "The statutes of newly projected railway companies shall contain provisions binding them (*a*) to purchase in Russia the whole of their goods-wagon rolling stock, and also their 1st, 2d and 3d class passenger carriages, as well on first establishing the line as during its working; and (*b*) to purchase in Russia all their locomotives, also on first establishing the line as well as during its working. The locomotives and wagons which have to be thus obligatorily purchased in Russia shall be delivered to the railway companies, partly from orders which have already been made up to that time by Government, and partly by direct order of the railway companies from the Russian railway rolling-stock works.

"3. Premiums at the undermentioned rates will be paid by the State Treasury for locomotives which have been constructed in Russian railway rolling-stock works for private railway companies, the orders for which have been given after the promulgation of the present decree: (*a*) The premium granted for each locomotive, together with its tender, is fixed at 2,400 roubles for each four-wheeled locomotive, 2,600 roubles for each six-wheeled and 3,000 roubles for each eight-wheeled locomotive. (*b*) Premium shall be granted for such locomotives only as shall have been constructed exclusively of parts made in Russian railway rolling-stock works. (*c*) The premiums at the above-mentioned rates are fixed for the term of five years, commencing from the date of the promulgation of the present regulations, and shall be paid to every locomotive builder for not more than thirty locomotives constructed by him in his works in the course of one year. (*d*) The premiums for the locomotive shall be paid to the builders on their presenting a certificate from the Government inspectors of the railway company to which the locomotive shall have been delivered, certifying the satisfactory result of the trial trip of not less than 3,000 versts (1,969 miles) of the locomotive in question, with wagons attached, the weight of which shall be regulated according to the level of the railway line, and given in detail in the technical conditions of the private order, the execution of which shall have been undertaken by the builder. The trial trip must be concluded not later than four months after delivery of each locomotive to the railway company.

"4. By way of experiment, for the term of two years until further examination in due legislative order, the importation of steel waste shall be allowed free of duty; only, however, when imported from foreign countries for cast steel and steel-rail works, in quantities corresponding with their manufacture, in conformity with the decision of the Imperial Council, confirmed by his Imperial Majesty on the 6th of June, 1861, in reference to the importation of foreign cast iron, wrought iron, and iron waste for mechanical works, and in accordance with the especial instructions to be issued by the Minister of Finance on this subject.

"5. The Minister of Finance shall be authorized to present, in due legislative order, special propositions for—(*a*) the increase of the customs duty on foreign locomotives and tenders; (*b*) the definitive decision of the question relating to the importation of steel waste free of duty from foreign countries for cast steel and steel rail works; and (*c*) the alterations which, on strict examination, will be found necessary to be made in the customs duty on steel in every shape, on subjects made of cast steel, and on certain articles belonging to railway stock; and,

"6. The Minister of Public Roads shall be authorized to adopt measures that in estimating the cost of new railway lines which are to be constructed, or of supplementary works and supplies for railway lines already existing, the estimates of the cost of the locomotives shall be based on the average price actually charged for them in foreign countries, together with the amount of the customs duty."

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Editorial Announcements.

Passes.—*All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.*

Addresses.—*Business letters should be addressed and drafts made payable to* THE RAILROAD GAZETTE. *Communications for the attention of the Editors should be addressed* EDITOR RAILROAD GAZETTE.

Advertisements.—*We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay,* EXCEPT IN THE ADVERTISING COLUMNS. *We give in our editorial columns* OUR OWN *opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.*

Contributions.—*Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to* ALL DEPARTMENTS *of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.*

THE NEW YORK FREIGHT POOL.

Within the past ten days the scheme for a combination of the four trunk lines concerning the freight shipped from New York westward has assumed definite form and the final steps for its consummation have been taken. There has been all along every appearance of a disposition on the part of the managers to carry out in good faith any practical plan. This might seem sufficient to insure the success of a combination; but it is not. Such schemes have more frequently failed because the difficulties to be overcome were not clearly seen and provided for, because the method of carrying out the fundamental idea was not fixed in detail, and because no provisions were made for the modification and development of a scheme which could hardly fail to need some amendments when tested by experience. It is not enough for three or four companies to agree that they will do thus and so; they must also determine the manner of doing, and provide a method which will insure that it be done and that all parties may know that it is done and done properly. Now, notwithstanding the several pools, successful and unsuccessful, that have existed, there is still comparatively little experience with them in this country, and very few railroad men have studied them sufficiently to know how they can be managed most advantageously, or what peculiar dangers threaten them. The latter knowledge, especially, is extremely desirable in the formation of plans. Usually plans have been made and executed with so indefinite an idea of the objects aimed at that they died a natural death, as it were.

The original contract for the New York pool, we understand, was severely simple—so much so that it hardly provided for its proper execution. Recently, however, these defects have been amended, and best of all, provision has been made for the modification of the scheme, and for its execution at the hands of the one man in the country who has studied the subject thoroughly, and has had such experience in the conduct of a similar project as to have at least learned the difficulties which lie in its way, and some of the effective methods of avoiding it. Mr. Albert Fink, late Vice-President and General Superintendent of the Louisville & Nashville Railroad, and the designer and first General Commissioner of the Southern Railway and Steamship Association, happening to be in New York when the combination was nearly prepared, was very naturally consulted by the parties interested and urged to undertake the execution of the plan. We understand that his suggestions have been largely followed in modifying the contract, and he has finally been prevailed upon to accept the position of "Commissioner," in charge of its execution. As a scheme of this kind is likely to be but the germ from which something better, larger and more perfect may be developed, it is especially fortunate that it will be under the constant observation of one qualified to detect its weaknesses as they appear and suggest remedies, to utilize the experience of its operation for its amendment. No scheme will execute itself, and when the scheme is new and in a new direction, not even a man skillful in ordinary administration is sufficient for the place. One is needed who can deduce general truths from the special phenomena of the new organization. Under the present circumstances very much may be hoped from the experiment. There are difficulties in the way which look formidable and very likely are more formidable than they look; the scheme itself, so far as known, seems quite imperfect; but even its partial success for a few months would be likely to secure its extension and amendment and the withdrawal of some at least of what now appear to be the most formidable obstacles in its way.

The shipments of freight from New York to the West during the past year are estimated to have paid about *eight millions of dollars* for carriage. The present rates are very low, the highest being but about 1.6 cents per ton per mile and the lowest hardly ¾ cent. Yet the current rates, if maintained throughout the year and collected in full, would have increased this revenue about one half. The fact is that throughout the year a large part of the traffic was carried at special reduced rates, under contracts entered into during a railroad war. If the companies had kept the peace, therefore, they would have been able to add, it appears, about *four million dollars* to their net earnings. This, however, would not have gone to the trunk lines exclusively, but to them and their connections, the gross amount named being the estimate for the shipments as billed, some of them of course going entirely across the continent to San Francisco, and most of them passing over more than one road. The fact that railroads out of the pool will profit by it as well as the parties to the contract, however, is no objection to it.

And there is reason to believe that if the object of the combination is attained, the shipping community will be pleased with the results as well as the railroads. It is long since the amount of the freight on goods shipped westward was felt as a burden, except on a few articles which compete with similar goods produced in the West. What the New York merchant has demanded was not lower rates, but fair play. It makes little difference with him whether the rate on dry goods is 50 cents or a dollar a hundred to Chicago, provided he gets as low a rate as any of his competitors, and no more than the agreed differences are made in favor of Philadelphia and Baltimore. But if the firm across the way has a special contract by which it gets a rebate of 25 cents per hundred on all goods shipped by its house, or goods are shipped from Liverpool to Chicago for less than the charge from New York to Chicago, or a Boston merchant can ship for half the New York rate, he finds his business seriously threatened, or perhaps entirely destroyed in some districts, through a discrimination against it. The contracts which have been made with individual firms at greatly reduced rates are the most iniquitous feature of recent railroad transactions. The community will never endure such discriminations, when it becomes fully aware of them, and it never ought to. It is simply insufferable that a corporation should hold the power to destroy a man's business by denying him terms which it grants to his competitors.

This discrimination will be destroyed by the pooling scheme, which is to go into effect July 1. By that time it is said that all the contracts for special rates will have expired, and the contract provides that they shall not be renewed, and it also provides that rates shall be maintained at the other ports. The effect of this will be that such discriminations as have existed in the steamships' contract for freight to be carried from Liverpool through the sea ports to interior points will be made nearly impossible. They would be quite impossible but for the fact that the Boston and Montreal business cannot be entirely controlled without extending the combination so as to include at least one other road. Of course, it is impossible to prevent discriminations between the steamer lines. But the steamer freight charge by itself is too small an amount to have any formidable effect in diverting freight from one port to another. If the railroads all collect the full regular rate from the seaport to the interior, no discrimination which the steamers may make will have much effect. At all events, the latter discrimination is one which it is impossible to prevent, and will probably continue to be made so long as the vessels find it impossible to get freights for Montreal, Philadelphia and Baltimore without accepting less than the New York rate.

A successful conduct of the present combination is likely to result in such an extension as will cover nearly all shipments from the importing cities to the interior.

It is, perhaps, not probable that any considerable reductions in expenses will be made at first through the combination. The main effort will be to keep the peace and maintain something like regularity and equality in rates. The companies have first to learn that they can do some part of their business in harmony before they will be willing to reduce their forces to a "peace footing," and extend the co-operation of efforts by which certainly very much can be gained—absolutely saved for the benefit of the companies and the community, one or both. But in a matter so delicate it is well not to attempt too much at once. The provision made for the development of the present scheme, and especially the wise selection of an agent qualified and disposed to study its results and watch for opportunities of improving it, give ground for the hope that it will be the beginning of a more rational and economical method of conducting competitive traffic, applicable generally on American railroads.

THE MASTER CAR BUILDERS' CONVENTION.

Probably the most successful convention that the Master Car Builders' Association has ever held was the one of this year at Cleveland. It is quite natural to compare the meetings of the two associations which are so nearly akin as the Master Mechanics' and that of the Car Builders. The characters of the meeting of the first in St. Louis and that of the last in Cleveland were, in one respect, almost exactly the opposite of each other.

At the Master Mechanics' Convention the time was devoted almost entirely to the reading of very elaborate reports, of which there were several, besides a number of shorter ones, so that there was not much opportunity for discussion, whereas at the Master Car Builders' meetings there were only a few reports, and these very short ones. The discussion of these were, however, very full and at times quite animated. The proceedings of the one convention, therefore, consisted chiefly of reports and of little discussion; the other convention had few and short reports and much discussion. As to which is the most profitable, we think the reports of the two meetings will show.

The attendance at the Master Car Builders' meeting was very good, about sixty members being present. Of course there were many others who were drawn there by the meeting, so that the audience was always very good. The meetings were held in the parlors of the Kennard House, which were just about of the right size; and as the streets outside are paved with wood, there was comparatively little annoyance from noise, which is nearly always a serious obstacle in the way of the success of the meeting. If committees of arrangements could only realize fully how much the success of meetings of this kind is dependent upon what might be regarded as purely mechanical matters, we think that the interest and the profit of the proceedings would be much greater than they ordinarily are.

The range of subjects discussed was very wide and comprehensive. It took in the use of iron and steel for car construction; dead weight of cars; the size and material for car wheels; brakes and brake shoes; the size of standard axle; draw heads and coupling apparatus, etc., etc. At first it was very difficult to induce discussion, but the association is perhaps fortunate in having several members who can work a deliberative bellows with more or less success. These plied it vigorously, and soon the retiring men became interested and began to talk, and after that there was little trouble from the discussions lagging.

It is often asked, "what do these conventions amount to," a question which we endeavor to answer each year in some form or other. Our answer this year will be the discussions themselves. If any one who doubts their value will read the discussions, or the abstract of them which will be published in the *Railroad Gazette*, we think that he will see that it is hardly possible for a person who has the charge of the repair and construction of cars on a railroad to fail to get some new and valuable ideas from hearing so general a discussion of subjects in which all who took part were immediately interested. There are, however, some people who have somewhat peculiar ideas about knowledge. They seem to think that our ideas, to be at all useful, should be capable of being written out in full, or formulated somewhat like a patent specification. The truth is, however, that the influences which do us most good are those which direct us or turn our attention to things which are new or true. This is the case in all relations of life. Now in coming to a convention like that of the Master Car Builders' Association, the attention of those present is quite certain to be turned to matters about which, in all probability, they have not thought very much, and which by reason of the interest excited by hearing the subject talked about they will investigate afterward. As an illustration of this, ref-

erence may be made to some points which were presented at the late meeting by Mr. Chamberlain, of the Boston & Albany Railroad, of sections of axles which were etched by acid so as to show the "grain," or rather the impurities in the metal. The object of doing this, as stated by Mr. Chamberlain, was, that he found some of the axles on his road would heat in spite of all he could do. He had them oiled in the most careful way, and finally packed the boxes himself, and still they would heat. He therefore examined them with a microscope and observed a peculiar rough appearance on the surface of the journals, which led him to suspect that the metal was not homogeneous. He then took one of the axles and cut a section off the end of the journal, and treated it with diluted muriatic acid, which showed that it was by no means homogeneous, and therefore he inferred that this fault was the cause of more or less abrasion of the journal bearing. Now, whether Mr. Chamberlain's theory is correct or not, we will not say at present, but it seems to us certain that every car-builder who saw his prints and heard him describe how they were taken will be induced to investigate the subject more or less for himself. The same result has doubtless followed from many other discussions, and persons who have attended these meetings go away from them in quite a different state of mind—although perhaps not conscious of it—in relation to various subjects, from that in which they came. If men come to such meetings—as some seem to—expecting that they will receive knowledge in a form somewhat like a certificate, which would be cashed on presentation to the Treasurer or Purchasing Agent of the company by whom they are employed, they will be disappointed. The same result would follow if such men were to listen to the wise men of the East, or any other philosophers or sages.

A very commendable thing was done this year, in accordance with the resolution adopted two years ago, that "in future there should be no expenditure of money for the public entertainment of the members of the Association," in declining an excursion to Put-in Bay proffered to them by the hospitable people of Cleveland. The excursion was politely declined, and we believe was not the cause of the slightest ruffle of unpleasant feeling, in either the hosts or the guests. This action, it is believed, frees the Association entirely from a danger which at one time threatened to sink it.

The discussions of several topics were of unusual interest—especially that on coupling cars and its dangers, which will be published in a future number of the *Railroad Gazette*. These will be commented on more at length when the discussions are published.

It was apparent, too, from the general tenor of the discussions, that the meetings which have been held during the past winter at the rooms in New York have, as has been suggested in these pages, been an advantage to the annual meetings. The material for the annual meeting is, in a certain sense, prepared for the yearly meeting, and members come to the latter more thoroughly conversant with the subjects and better prepared to discuss them intelligently from having heard them talked about before. The cause of regret is, that it is not possible to induce more railroad men to take an active part in meetings of this kind.

Some "Facts" in the Iron Mountain Decision.

In the decision of the United States Court on the application of the Union Trust Company for the appointment of a receiver for the St. Louis, Iron Mountain & Southern Railway, some remarkabe statements were made by the judges, indicating that they had not read the testimony in the case with the care which is supposed to characterize the judges in an important case—or unimportant, for that matter.

The application was made in behalf of the owners of bonds made under the consolidated mortgage, and referring to this mortgage the decision says:

"It became apparent, very soon after the mortgage was made, that the company could not complete its road to its terminus at Texarkana, Ark., where it was expected to unite with the Texas system of railroads, and pay the interest on its bonded debt, and arrangement was made by which the interest coupons * * * * were to be funded and the company relieved from the burden of the interest temporarily. This carried them past October, 1876. * * *During these two years the road was completed to Texarkana*" [the italics are ours].

Now the facts are, and they were undisputed, that the road was completed to Texarkana on the last day of December, 1873, or the first day of January following; the mortgage was made in May, 1874, and the funding arrangement dates from the winter or spring of 1875. The Court apparently made its decision under the impression that the funding agreement was for the purpose, in part at least, of providing for the extension of the road to Texarkana, and that until last year it had no connection with the Texas railroad system; and that this was their impression appears further from another statement in the decision, where, enumerating some of the indications that the road's prospects are improving, the following language is used: "Above all it is true that the road has been very recently finished to points connecting it with the whole system of Texas railroads."

Perhaps this misapprehension had little effect in determining the decision. The application was for a receiver pending a suit for foreclosure, and the Court was not called upon to decide upon the foreclosure suit, but only whether it was necessary and proper under the circumstances to put the property into the hands of a receiver pending the suit, to secure the interests of the bondholders. What the Court decided was that there was no such danger of loss to the bondholders bringing the suit as to justify the appointment of a receiver. The future prospects of the road formed one element in the grounds for a decision on this point, but there were others, and doubtless prominent among them the character of the officers of the company, the absence of charges of fraud, mismanagement, or misappropriation of income. But it seems remarkable that so gross a misstatement of undisputed facts of record should have been made in such a decision; and however proper the decision may be, and however little the facts referred to may have affected it, it is not pleasant to think that such mistakes can be made in one of our highest courts in a matter involving a property worth millions.

The New Organization of the New York Central.

The New York Central & Hudson River Railroad Company was formed, as it were, by an aggregation of several other companies, each with an organization, or an excuse for one, and a staff of officers more or less complete and efficient. Very properly it took over the capable and experienced officers of the old companies into its own service, and in doing this its organization was made rather to fit its staff than its staff selected to fit the organization. The latter, indeed, seemed crude and unsuitable for so great and complex a business as that of the company had grown to be. At a meeting of the board recently elected a new scheme of organization was adopted more in accordance with the present condition of the company. There is, however, hardly any change in the *personnel* of the staff—only in the distribution of duties and responsibilities. The company has two Vice-Presidents, one in charge of the finances and the other of the operating department of the road. Mr. Cornelius Vanderbilt, long Treasurer of the Harlem Company and very generally known among railroad men and esteemed a very capable business man, has the first place, and his younger brother, Mr Wm. K. Vanderbilt, who has been in the company's service two or three years past, and has represented it in some very important affairs, has the second place. The new office of "General Traffic Manager" is created (hardly known here, but very common in England), and Mr. James H. Rutter, for several years General Freight Agent of the road, is appointed to this position. This officer is at the head of the entire commercial department of the road, having charge of both freight and passenger business, the General Freight Agent and the General Passenger Agent forming the heads of his special staff. Mr. Rutter was General Freight Agent of the Erie before taking his late position, and is generally known as an extremely capable officer. He is succeeded as General Freight Agent by E. Clark, Jr., who has been Western Freight Agent of the road at Buffalo. The road continues with two general superintendents, with distinct jurisdictions, as before, Mr. Tillinghast and Mr. Toucey continuing in these places. A new office is that of "General Counsel," filled by Mr. Chauncey M. Depew, a well known lawyer and orator, formerly Secretary of State of New York, and for two years past in the company's service. This office will have charge of real estate and taxes as well as ordinary legal business. Mr. Rutter and Mr. Depew are two general officers who are also directors of the company.

An important addition to the general offices is that of "General Auditor," who besides having direct charge of all matters pertaining to the freight, passenger and disbursement accounts, also has custody of all written contracts for construction, equipment, repairs, supplies, etc., takes charge of old material and has power to sell it, and examines and approves requisitions for supplies and vouchers for the payments required by the contracts which he records. This position of great responsibility and trust is given to Mr. Isaac P. Chambers, recently private secretary to the President, but for many years Auditor of the Hudson River Railroad before the consolidation. Mr. Chambers has been in the service of the company twenty-two years, and for nearly all that time in a position of peculiar trust, so that hardly any one else in the company (or elsewhere) is so intimately acquainted with its whole interior history. As long ago as the presidency of Samuel Sloan he served as his private secretary, while at the same time Auditor, and under the Vanderbilt management he has had most important and delicate and responsible duties to perform. The office which he now holds is hardly more than a recognition of the duties which he has long performed without any title. There are three sub-divisions of Mr. Chambers' department—Auditor of Disbursements, Auditor of Freight Accounts, and Auditor of Passenger Accounts. The Auditor of Disbursements, Mr. D. W. Tuthill, has heretofore been the company's Auditor. Mr. John F. Desmazes, the Auditor of Freight Accounts, has been the General Freight Accountant for years. The Auditor of Passenger Accounts, Mr. Charles H. Kendrick, is almost the best known man on the road, having been General Ticket Agent for many years, and universally esteemed in that position. He was some time ago relieved of one part of his former duties by the appointment of a General Passenger Agent, Mr. C. B. Meeker, who remains in that position, and Mr. Kendricks' duties will be in many respects the same as when he went by the title of General Ticket Agent. The division of duties in this department assimilates it to that of the Pennsylvania Railroad, in which some years ago Mr. Gwinner, the General Ticket Agent, was made Auditor of Passenger Receipts.

The other departments remain as they were, with the same officers, the Motive Power Department having too many heads for its own good, the company probably feeling unwilling to subordinate any of them to the other or to another.

Steam in New York Streets.

New York street railroads seem likely to have an opportunity to test the practicability and economy of steam as a motive power on their lines, a committee of the Common Council having reported in favor of granting permission to make the trial with five engines on several roads. It is understood that the Third avenue line, the most crowded of them all, will put some Baldwin engines on its line in the upper part of the city, from Sixty-fifth street to Harlem, a distance of about three miles, as soon as it obtains the necessary authorization. This will not give a thorough test of the practicability of steam in the crowded New York streets, for Third avenue at that end of the city is not very busy, though pretty well built up for much of the distance; but steam power may be more advantageous there than further down, where the traffic in the street would make dangerous any greater speed than that now obtained by horse power. It is well, however, to begin where the difficulties are least and the advantages greatest. The chief obstacle is sure to be the opposition of those who use the street and the owners of property on it. A few weeks may prove this opposition to be ungrounded and cause it to disappear, and then the introduction of the new motor on the more crowded streets will meet with little difficulty. Prove that this prejudice is unfounded and the way will be easy. Then the question of economy will decide whether and where steam shall take the place of horses.

It has been proposed that it shall be made a condition of the use of steam on New York street railroads that the car seats be divided so as to give a separate place for each passenger, and that no passengers shall be admitted when all these places are filled—to prevent cars with seats for 22 from carrying 60 or 70, as is quite often the case at present. Some such requirement will be perfectly legitimate and desirable if it appears that the use of steam will make it practicable to provide seats at all times without depriving the companies of a reasonable return on their investment, though there will doubtless be times when it would be felt as a great hardship by the public. What is needed is that sufficient accommodation should be provided for the two parts of the day when there is ordinarily the greatest pressure of traffic. The extraordinary occasions when there is a great and unusual tide of travel, such as there was last fall, for instance, one Sunday afternoon when the Hell Gate mine was exploded, it is next to impossible to provide for. But if people can be sure of a seat nineteen times out of twenty on their way down town in the morning and up town in the afternoon, the inconvenience and suffering will be so reduced that little cause for complaint will remain, especially as the additional capacity gained for the daily needs can usually be rendered available for the extraordinary occasions.

Record of New Railroad Construction.

This number of the *Railroad Gazette* has information of the laying of track on new railroads as follows:

Nashville, Chattanooga & St. Louis.—The *Jasper Branch* is extended from Jasper, Tenn., north by east 7¾ miles. It is of 5 ft. gauge.

Joplin.—Extended 5 miles to Joplin, Mo., completing the road.

This is a total of 12¾ miles of new railroad, making 583 miles completed in the United States in 1877, against 687 miles reported for the corresponding period in 1876, 312 in 1875, 570 in 1874, and 1,271 in 1873.

Railroad Conventions.

Annual conventions of railroad associations will be held as follows:

The Southern Railway and Steamship Association will hold a convention at the St. Nicholas Hotel, New York, beginning at 1 p. m. Wednesday, June 27, to which are invited not only officers of companies in the Association, but also those of other companies interested in the freight business of the South and Southwest.

POOR'S MANUAL, the great thesaurus of information concerning American railroads, will appear this year about the end of next week. By the favor of the publisher we are permitted this week to present the introduction (with slight omissions) from the proofs. This introduction is an extremely interesting and important document, which deserves careful study. We receive it so late that we are unable to make any comments on it this week.

THE FAST TRAINS have not been withdrawn yet, but probably will be at the end of this week; and the rates have already been restored. Very little was agreed upon except to restore rates, differences of opinions and claims of "rights" remaining about as they were. There may be something further agreed upon, however, as the companies are still negotiating.

THE MASTER CAR BUILDERS' REPORT, printed on the first pages, by an annoying blunder has been made to include the report of the Secretary of the Master Mechanics' Association. The error was only discovered after the form containing the report had been printed.

OUT WEST.

V.

AURORA.

The shops of the Chicago, Burlington & Quincy Railroad a Aurora, Ill., have always represented what might be called the most advanced practice in the mechanical engineering of railroads. The officers of this road have always been ready to adopt any real improvements in railroad machinery which offered. As on many other lines, however, the necessity of economizing has pressed hard on them, and now attention is given

almost exclusively to maintaining the rolling stock in the most efficient condition, and very little new work is now done. The repair of old boilers and the rehabilitation of old cars is not a topic about which it is possible to do much interesting writing. Mr. Challender, who has charge of these shops, like other master mechanics has learned by experience that to burn coal, especially if it is of poor quality, as nearly all Western coal is, a big boiler is a good thing. He is therefore building some boilers of unusual size to replace those which are worn out on old engines. It is strange how long it has taken to teach that lesson. Probably the reason has been that those in charge of the design and construction of locomotives have had so little to do with their practical operation. There is no science so effective in teaching the proper proportions for locomotives as a little experience in pulling a heavy train up a long grade with a poor quality of fuel, and there is no time when so many profitable engineering reflections and inferences will crowd upon a young engineer as during the few minutes when it is doubtful whether his engine will or will not pull its train "up the hill." At such times a big boiler which will make plenty of steam at the critical moment is worth a great deal more than any fine-spun theories about lap and lead or length of steam-ports.

Since the writer's previous visit to Aurora, the car shops had been entirely destroyed by fire, and they have all been rebuilt since in more substantial form. Although an immense amount of work was done in the old shops, the new ones would afford much greater facilities. Like many other establishments of this kind, however, about the time they were ready to do the work there was little or no work to be done.

Among the new things observed in the shops was a truss for passenger car bodies consisting of an iron plate 26 in. wide which was placed in the position usually occupied by the "truss plank." This plate is made of No. 10 iron and extends the whole length of the car body and is screwed fast to the posts. A flange is turned on the lower edge, by which it is bolted to the sills. This form of truss occupies much less space than the usual truss plank, and is another example of the application of iron to the construction of cars.

Mr. Challender is now applying to freight cars a form of the Potter draw-bar which has the merit of giving greater safety to those who couple cars. The bar is made of cast-iron and has a heavy bracket cast on the upper side which prevents it from being pushed inward further than the bracket will allow. This affords protection not only to the buffer springs, but also to the hands of a person who attempts to withdraw the coupling pin at the moment the cars come in contact with each other. A drawing of this arrangement was promised, which will enable us to give our readers an engraving of it.

The only new work in progress in the car shops is ten refrigerator cars. All the equipment of this road is maintained in its usual good condition, and the cars and engines all seem to indicate that the stock of the company is selling at par.

JACKSON, MICH.

Aurora seems almost like a suburb of Chicago, so that in leaving the former and turning eastward we must say farewell to the latter. At Jackson are located the principal locomotive shops of the Michigan Central road. These have been built within a few years, and the machinery and equipment from the old Detroit shops were removed to them. The shops are substantially built of brick, are large, and seem to afford ample accommodation for the present motive power. They are under the direction of Mr. S. H. Edgerly, Master Mechanic. He has recently been building some heavy engines for running the through passenger trains, which often require a very powerful locomotive. Some idea of the size of these may be formed from the fact that they weigh 38 tons and have 17 × 24 in. cylinders. The grates are six feet long and the boilers 52 in. in diameter, with 196 tubes, 173 of which are 2 in. in diameter and 23 2¼ in diameter. The use of different sizes of tubes in locomotive boilers is uncommon. The larger ones are placed at the bottom of the boiler and are used, we believe, because they can be kept clean easier than the smaller ones. The boilers are made of steel ⅝ in. thick, with all the horizontal seams double-riveted and with a wagon-top 9 in. high. The boilers are intended to carry a steam pressure of 150 lbs. per square inch. The driving-wheels are spread 8 ft. 6 in. from centre to centre. Two pumps and an injector are used on each engine. The tenders are made to carry 9⅛ tons of coal and 3,000 gallons of water. They have 33-in. wheels, and the journals of the tender axles are 4 in. in diameter and 7¼ in. long. The practice of Mr. Edgerly, of Mr. Pullman, and others, indicates that instead of being in error in adopting too large a journal as a standard, the Master Car-Builders' Association was mistaken in making it too small; and quite a number of those who have had experience in its use now say that the size adopted should have been 4×8 in. However, experience is teaching that lesson quite rapidly enough, so that much discussion of it will hardly be necessary hereafter.

Mr. Edgerly has learned what has already been referred to in this letter, that to burn coal successfully a big boiler is a good thing. He is therefore lengthening out many of the fire boxes of old engines, a practice which Mr. Challender has also adopted.

Among other work in progress in these shops is a very powerful derrick car of original design. It would be impossible to describe its construction without an engraving, which we are not now able to give.

The Michigan Central Railroad Company is unfortunate in having a large number of locomotives of very antiquated design, which it seems certain it would be more profitable to destroy and replace with new engines than to repair and rebuild.

The car shops of the Michigan Central Railroad are located at

DETROIT,

near the Grand Trunk Junction, which is three or four miles out from the centre of the city. They are also comparatively new, and the machinery from the old shops, which were located near the station in the city, was removed to them. They are under the management of Mr. Robert Miller, formerly of the Aurora shops, and like nearly all other repair shops they are now employed almost exclusively on repair work. Mr. Miller has just designed a new truck for 42 in. wheels which seems to be a very excellent plan. He is a strong advocate of the large wheels, and during the journey of which these letters are a record many other railroad men were found to favor their use. Some were, however, fearful that the larger size would be unsafe, owing to the greater lateral strain they would be subjected to on account of their larger size. It is certain, however, that they will be thoroughly tested on this and other roads, and experience in their use will soon give us information worth much more than any speculation possibly could be.

Mr. Miller has been repairing recently a number of the old cars belonging to this line which were equipped about ten or fifteen years ago with Ruttan's ventilating apparatus. This, as some of our readers may recollect, consisted of a large vessel or reservoir of water hung underneath the car body, resembling somewhat the box or receptacle used sometimes for carrying tools, provisions or baggage. The air for supplying the car was taken in by a hood on top of the roof and carried down to the reservoir, and by passing over its surface the dust and cinders were deposited in the water, and the air was thus purified. The arrangement when in good order worked very satisfactorily for a comparatively short distance of say about fifty miles. The reservoir was then liable to become choked with cinders, and its operation was then uncertain. The use of the apparatus was, however, attended with another evil which the repair of the cars revealed, although it was known before. The moisture of the water in the reservoir caused the timbers underneath the car to decay very rapidly, and in repairing them they must nearly all be removed or pieced up.

Mr. Miller was just completing a dry house for drying lumber at the time of our visit. There is reason for believing that some reliable information is needed about the process of drying lumber by artificial heat, and if some one thoroughly conversant with and experienced in that subject would contribute at least a part of his knowledge to the railroad public, he would be supplying useful information which at present we do not know where to find. There is probably some way or ways which are better than any others, and car-builders are interested in knowing what they are.

Within a short distance of the Michigan Central shops are the Detroit Bridge and Iron W rks. This establishment is moderately busy on the following orders: One span of 175 feet and another of 90 feet for the Wabash Railway. These are both Pratt trusses, the larger one having double intersections of the diagonals with the posts and the other single. The top chords are made of channel bars with covering plates on top and open below. Instead of being united together on the under side by lattice work or other method, the channel bars are fastened together by cast-iron diaphragms bolted between the channel bars and filling up the entire space between them. This arrangement, it is claimed, not only ties the two bars together, but gives them what we will call diagonal stiffness. The longer span bridge is to be erected near Rockfield, Ill., and the other near Jacksonville, Ill. Other orders are for a combination span of 90 ft. for the Chicago, Burlington & Quincy Railroad; about 700 ft. of plate girders for the Detroit & Milwaukee Railroad, to be made in spans of 100 ft.; a double-track draw-bridge for the Union Stock Yards Company of Chicago, 150 ft. long; and a fixed double-track through span of 115 ft. for the same company. Both of the latter are to be built with three trusses. Besides these, they have an order for a single-track bridge of 120 feet span for the Detroit, Lansing & Northern Railroad.

This company has also built and is running a forge for the manufacture of car and locomotive axles, shafting for engines, mines and steamers, and is doing a considerable business in that line.

The establishment which will interest a railroad man in Detroit most is that of the Pullman Car Company. It is here that its finest work is done, and these shops may be called the laboratory or studio of the company, because it is here that is done the chief part of the brain work—the devising and the inventing. Several hotel cars have just been completed here, which are probably the best-finished cars ever built in this country. They are 64 ft. long over the body, 9 ft. 11 in. wide over all, and have six-wheeled trucks with 42 in. paper wheels. In the centre of the car is the main saloon with ten sleeping-berth sections and one state room for the accommodation of a party of several people. At the end of the car are the kitchen, porter's room, wine locker, closets, etc. The finish of the wood work is white oak and burl ash, inlaid with white holly, rosewood and mahogany. The ceiling of the clear-story, instead of being covered with head lining, is paneled with white oak, ash, ash burl and with rough gold ground in the panels, inlaid with ebony and decorated with designs painted on in bright colors. The whole design is in the Queen Anne style, which is now so much in vogue in architecture and interior furnishing. Being all finished in light-colored wood, the effect is very different from that of most of the cars which this company has built heretofore. The design, too, is the most pleasing which the Pullman Company has thus far brought out, and that combined with colors used makes them altogether the most beautiful cars ever built in this country. The state-room and the ends of the cars are finished with walnut and rosewood decorated with engraving in the wood, which is gilded. The ceilings at the ends are also paneled, but with walnut instead of light-colored wood. The metal work, lamps, etc., are all silver-plated. Three cars of this style have been built, and are intended to run on the Chicago & Northwestern Railway.

There was also in progress and approaching completion at the time of our visit a private car for Mr. Pullman. This will surpass in magnificence anything ever attempted in this country, and it is doubtful whether any king or emperor in Europe will travel more sumptuously than Mr. Pullman and his friends when this car is finished. The centre saloon or parlor is finished in the same way as in the cars already described, that is, with light-colored wood, white oak, burl ash, etc. The end compartments are finished in mahogany, the ceiling panels with a ground of rough gold decorated with paintings. Adjoining the main saloon is a state-room with sleeping and dressing-room adjoining. This is finished in white maple and amaranth mouldings, the ceiling finished in panels with rough gold ground and decorated in colors. The room is provided with an empire folding bedstead and with a lavatory, wardrobe, etc., adjoining. The main saloon is furnished with a library table in the centre and with an organ, writing desk and two beds. There is also a sleeping compartment adjoining, with four sleeping berths. At one end of the car there are also a kitchen, porter's room, pantries, etc. The designs of the ornamentation of the ceilings are some of them very beautiful. The panels have evidently been painted by a skillful artist, one of the designs, representing bulrushes—with young Moses omitted; another of fuchsias and humming-birds was very beautiful. The chandeliers and other metal work are all gold-plated, and although the upholstery was not all in place there was enough to show that it would all correspond in elegance and cost with the rest of the interior. The workmanship of all the wood work was of the very best kind, and would afford quite as much pleasure to a mechanic as to an artist.

In all of these cars an improvement has been introduced which is intended to prevent the upper berths from shutting up in case the car in overturned. This has occurred in one or two accidents, and the occupants of the berths have been killed or injured in that way. To prevent this a wire rope is attached to each end of the berth and fastened to the floor of the car so as to hold the berth down or open in case the car should be upset.

The experience of the Pullman Car Company also indicates that the recommendation of the Master Car Builders' Association to adopt as a standard for car axles a journal larger than those in ordinary use was correct, both in principle and practice. In 1869 the Pullman Company adopted an axle with a journal 3¼ in. diameter × 6 in. long; in 1871 it changed the standard to 3⅛ × 7 in., and in 1875 it made it 3¼ × 8 in. The journal recommended by the Master Car Builders' Association, it will be remembered, is 3¼ × 7 in. The cause for regret now should be, not that the standard recommended was so large, but that it was not made 4 × 8 in.; and it is believed that many experienced car-builders and other railroad men begin to see this.

Another improvement in progress at these shops is an axle box with an end bearing for the axle. This consists of what is called a stop wedge which is placed over the journal bearing in the same position as the ordinary wedge or key. It is, however, made of wrought iron with a lug or flange which comes down over the outer end of the journal, so that the section of the wedge is somewhat like that of a letter L laid on its side, thus ⌐. On the inside of the lug or flange a plate of brass is riveted, against which the end of the axle bears. A suitable projection on the top of the wedge and a recess in the box hold the wedge in its place. It has not yet been used long enough to tell whether it will accomplish all that is desired, but it promises to do all that is claimed for it. It should be added that in connection with this end-bearing a dust guard made of "vulcanized fibre" is also used.

The Pullman Company's shops are perhaps the most complete of any in the country. The best workmen which its proprietors could find in railroad shops have been taken into their employ, and probably no more efficient set of men can be found anywhere than in the shops at Detroit. Nearly all the work in the cars, even to the plating and the silvering of mirrors, is done in the works. Everything which will help to make the work done here more perfect is adopted, and any improvements which promise success are quite certain to receive attention. As an illustration of this, Mr. Bissell, the Superintendent, showed the writer a wooden dust shield for the windows of the cars which had been tried and found to work very successfully. It consists simply of a board with an ingenious brass attachment for holding it in the window, and it operates by deflecting the air and dust in such a manner as to create an outward current through the window. It was found to work satisfactorily, and an order to manufacture 1,000 of them was given at once, so that travelers may expect to find them on most Pullman cars hereafter.

TOLEDO.

A few hours at Toledo afforded an opportunity to make only a hasty visit to the car shops of the Wabash Railway. These have been much enlarged of late years, and are now in condition for doing a great deal of work. They are under the charge of Mr. U. H. Kohler. A train of cars has recently been equipped with Higley's patent journal boxes, and Mr. Kohler reports it as working very satisfactorily. The peculiarity of this box consists in the fact that the axle, instead of rubbing against a fixed bearing, is carried by a set of friction rollers similar to those which are often used for an ordinary grindstone shaft, excepting that the relative position of the axle and the rollers is reversed on a car.

From Toledo the journey which has been described in these letters was continued to Cleveland, where the Master Car-Builders Convention was to meet on June 13. As the proceedings of that convention will be fully reported in another page and in future numbers of the *Railroad Gazette*, the journey "Out West" will be considered ended here.

Contributions.

How to Build a Railroad without Much Money, and How it will Result.

TO THE EDITOR OF THE RAILROAD GAZETTE:

Just now a lesson in rascality would seem to be sadly out of place. The neatness and dispatch with which all sorts of swindling operations are performed by ringsters and "bull-dozers" of all classes, and which so seriously affect the American people, socially, morally and politically, is truly marvelous. But, notwithstanding the perfection reached by our students in rascality, there are some "tricks that are vain" that have recently been successfully performed by a professor of long practice that seem to be new discoveries in the science of "hontswoggle." The following will explain:

Many years ago a company was organized to build a railroad in one of the Western States, and several miles were graded through a wilderness, when the funds gave out and work was suspended. Some years later the managers somehow got the work in progress again, and pretty soon there was another collapse.

Finally, after a long series of suspensions and resumptions, some of the road was completed. More years followed in which efforts were made to raise the wherewithal to push the work to completion. These efforts consisted of every ingenious method known to secure State and municipal aid, town bonds, stock subscriptions, loans, etc., but all efforts at home and abroad were miserable failures.

In the meantime, another company had started a road at a point somewhat remote from the first-mentioned and running in an opposite direction, that is, the two companies were working toward each other on a line that would bring them together if they continued operations. The financial experience of the latter company was, however, similar to that of the first, and they were compelled to suspend operations. Each company had some road that it struggled along with, operating with a limited equipment and under all the disadvantages arising from poverty. After a time the two companies sought to strengthen each other by consolidation. The consolidation was effected; but as both companies were "rotten sticks" no good came of it, and the money to build the gap of about 50 miles was as far out of reach as ever. To operate both ends of a line with a gap of 50 miles in the middle not built was unprofitable to the owners and highly unsatisfactory to the residents along the unfinished portion of the line. Rumors of an early completion were occasionally circulated, and the people who would be benefited by the road were seized with a new hope. The managers had encouraged a belief that they had about closed negotiations which would put them in possession of ample means for a rapid forward movement. So from year to year was hope deferred, until all at once, as if by magic, the whole 50 miles was covered with men and teams. Farmers awoke in the morning to find their fences torn down and their crops laid waste by armies of men that seemed to have sprung up out of the earth. Plows and scrapers and carts and wagons were busy at the earth-work, and men were cutting timber for culverts, ties, bridges, trestles, etc., and there was joy in the land. The people were now to have their fondest hopes realized; they were to have the long-wished-for road. Agents went about purchasing timber of the farmers, buying provisions, engaging board and forage, and the wayside blacksmith and the country merchant and the shoemakers were not forgotten, and the miller and the butcher at the village were honored with frequent visits from the contractors' agent, whose smile was "childlike and bland," and "he would pay on the 15th." And thus like an army of a million tramps did this army of railroad fiends swoop down upon the willing but defenseless, honest and industrious people. Like locusts did these hungry devils destroy everything in a belt ten miles wide along the road.

The work being light, in a few weeks the road-bed was ready for the rails, and lo! all at once the men, the mules, and the horses and plows, and scrapers and carts and wagons were gone, and nothing paid for. Their going was as sudden and mysterious as their coming. They seemed to vanish into the earth. And the paymasters and contractors, where were they? Echo answers, where? Now along comes the construction train like a tornado, and before the good people recover from their astonishment the thing is done. A connection is made and the natives gaze in wonder as long trains pass over ground where but a few days before stood the ripening corn. "This is all very fine," say they, "but where is our pay for what we have done toward bringing this about? The contractors are gone but the *company* will surely pay us." The manager or chief scalawag was appealed to, but he says: "The company owes you nothing; we have paid the contractors every cent, and you must look to them for your money." This is the way it was done: The managers failing to rope in capital to complete the road, arranged with some enterprising contractors, stipulating that the company should pay them a certain sum, which would amount to the contractors' share of the profits, providing all sub-contracts and other construction accounts were paid in full.

Says the Co. to the con.: "We will pay you what would naturally fall to you as profits after you had paid up everything. Then you meander out of the country, and let these natives whistle, if they can cease swearing long enough to get on a pucker."

It would take a page of the *Gazette* to detail the effects of this swindle on that strip of well-populated country 50 miles by 10. Hundreds of families who were in comfortable circumstances were suddenly impoverished. Hundreds thought they saw a way to make a few dollars honestly, by which they could lift the mortgage from their homes or farms, but instead of paying old debts they have made new ones, and in many cases lost their farms and other property. Will this outraged community tamely submit to all this? Already attempts have been made to burn bridges, switches have been misplaced, and within a week of this writing a passenger and freight house, with several cars loaded with wheat and merchandise, have been burned, and not a day passes without some show of violence and threats of all manner of punishment. Local business on the road, which had been brisk, is now paralyzed. People fear to trust their lives or property on the road. Station buildings along the line have not been paid for, and some of them are locked against the company by the builders; and from present appearances serious trouble may be expected along the line.

How the company managed to get the iron for the road is yet a secret, but the way the road was graded, tied and bridged may be regarded as a masterpiece of "cussedness." But will it win in the end? At all events the best way to build a railroad is to "pay as you go," and if you can't pay don't go.

There are many of these people who have been swindled that would not hesitate to destroy the lives and property of innocent people out of revenge on the swindlers-in-chief in this affair, and in the event of a train disaster caused by these outraged people, where should the blame properly rest? Of course no reasonable person would resort to a criminal act under such circumstances, but a hungry stomach hath no reason, and the —— railroad has caused an army of stomachs to become empty.

The perpetrators of the above-mentioned wholesale (and retail) robbery are said to be guilty of another rascally trick, to wit: They were, as aforesaid, unable to raise a dollar under any or all of the company titles, and as the right of way of the unfinished portion was covered by mortgage a new company was organized under a new name, and the road completed and leased to the old company. This was calculated to rob the bondholders of this portion of the road. The bondholders are making a strong effort to regain their property and remove the present receiver, who is charged with all this trickery.

The foregoing has been written for the benefit of those who are longing for an opportunity to revive some weak railway project. While you are studying on "ways and means" stick firmly to the resolve to "be just to all men."

WM. S. HUNTINGTON.

The Results of "Mulishness" and "High Tone" in Railroad Men.

TO THE EDITOR OF THE RAILROAD GAZETTE:

On the Jackson, Lansing & Saginaw Railroad, on the 9th of April, a south-bound freight train encountered about 30 cords of wood that had fallen on the track near St. Charles. The locomotive and nine cars were badly damaged, and the engineman, fireman and a brakeman were severely though not fatally injured. The wood had been piled far enough from the track, but the snow and ice melting away from under it caused it to fall toward and upon the track. Accidents of this kind are frequent at that time of the year, yet any one who would call the attention of *some* road and section-masters to the importance of care in piling wood would be sneered at.

Any one in charge of a road should make it a special care that all material of whatever nature piled near the track should be made safe. A few days since the writer saw a locomotive severely bruised and disfigured by running against a pile of stave bolts that the station agent had stupidly allowed a granger to pile within a foot of the rail.

It is safe to say that three-fourths of all the railroad accidents are caused by a sort of mulish stubbornness and disregard of instructions relating to *trivial matters*. It will be remembered that there is no discipline on some roads. Hence these remarks.

A paragraph in the "Roadmaster's Assistant" mentions the importance of track-men keeping a sharp eye on road piles in thawing weather. A road-master criticises this, and says "it is better to pile the wood safely, and there will be no need of watching it." The road-master is right respecting the safe piling, but however well the wood is piled it should not be neglected or lost sight of.

Supposing the snow has been cleared away (as it always should be) before piling the wood, and a *good* foundation prepared, there will of course be no danger from melting snow and ice, but *frost* may raise mischief by coming out from under one side of the pile at a time. The action of frosts, sun and rains may be such as to lower one side of the pile and raise the other, and a little disturbance of this kind, together with the jar of passing trains, will get that wood pile upon the track. It is no sign of superior capacity or ability to ignore hints of safety, as many do whose minds "soar" above any duty that looks small to them. There are Chief Engineers in this country who are rapidly gaining eminence and a world-wide reputation for efficiency in the construction and maintenance of railroads, and these men are as willing and anxious to learn the best method of tamping a tie or which is the most perfect rail joint fastening, and take as much interest in what may (by some) be deemed of too little importance to deserve attention, as they do in calculating the strain on a long-span bridge. Railroad companies fortunate enough to secure the services of these men will not be likely to experience any "Ashtabula horrors." The habit these men have of paying attention to *small matters* renders it morally certain that nothing of greater importance will escape their vigilance. *Duty* is uppermost in their minds, and they feel it as much their duty to know the safe or unsafe condition of the smallest culvert on the road as of the longest bridge. Spring is the time when wood piles tumble down, fences, round houses, shops and other buildings take fire from accumulated waste and rubbish lying around loose, or in piles, and then is a good time to conclude that you can never become *great* until you can fully recognize the importance of *small* things, and that conceit, obstinacy, mulishness and "*tone*" never find a place in the make-up of a *first-class* "railroad man." Look out for wood piles and loose rocks and fires.

WM. S. HUNTINGTON.

General Railroad News.

OLD AND NEW ROADS.

Foreclosure Sales.

The following sales of railroad property under judicial process have taken place:

The *Marietta, Pittsburgh & Cleveland Railway* was sold under foreclosure of the first mortgage in Cambridge, O., June 13. It was bought for $200,000 by Cyrus W. Field, of New York, for account of the bondholders. The road extends from Marietta, O., to Canal Dover, 98 miles, with three short coal branches, 5.5 miles, making 103.5 miles in all. The bonded debt by the last report was $3,500,000, the bonds being chiefly held in England.

The *Plymouth, Kankakee & Pacific Railway* was sold at Momence, Ill., June 12, under foreclosure of mortgage, and bought by John C. Cushman, attorney for some of the bondholders, for $4,000. Mr. T. J. Nicholl, who claims ownership under a sheriff's sale to satisfy a judgment, entered a protest against the sale. The road was intended to run from Plymouth, Ind., westward to Bureau Junction, Ill., 170 miles, and a good deal of grading has been done on it, but no track laid.

Dividends.

Dividends have been declared as follows:

Philadelphia, Wilmington & Baltimore, 4 per cent., semi-annual, payable July 2.

Augusta & Savannah (leased to Central, of Georgia), 3½ per cent., semi-annual, payable on demand.

Southwestern, of Georgia (leased to Central, of Georgia), 3½ per cent., semi-annual, payable June 20.

Shore Line (leased to New York, New Haven & Hartford), 4 per cent., payable July 5.

Lehigh Valley, 1 per cent., quarterly, payable July 16.

Allowance for Foreign Freight Car Mileage.

The following circular has been issued, dated New York, June 18, 1877, and directed to "connecting railroad companies": "The undersigned will reduce the mileage on eight-wheel freight cars from one cent to three-quarters of a cent per mile, and on four-wheel freight cars from one-half cent to three-eighths of a cent per mile, to take effect July 1, 1877." Signed by Wm. H. Vanderbilt, President New York Central & Hudson River Railroad, President Lake Shore & Michigan Southern Railway, President New York & Harlem Railroad; Thos. A. Scott, President Pennsylvania Railroad; John W. Garrett, President Baltimore & Ohio Railroad; Hugh J. Jewett, Receiver Erie Railway; J. H. Devereux, President Cleveland, Columbus, Cincinnati & Indianapolis Railway; H. B. Hurlbut, President Indianapolis & St. Louis Railroad; Daniel Robinson, Vice-President Troy & Boston Railroad; Wm. Bliss, General Manager Boston & Albany Railroad; Joseph Hickson, General Manager Grand Trunk Railway; F. Broughton, General Manager Great Western Railway; A. L. Hopkins, General Manager Wabash Railway; A. L. Hopkins, Receiver Toledo, Peoria & Warsaw Railway; H. B. Ledyard, General Superintendent Michigan Central Railroad; W. L. Scott, President Canada Southern Railway.

Down to 1874 the rate was two cents per mile; it is claimed that ¾ cent is now equally profitable. Indeed some were in favor of reducing it to ½ cent and claimed that this left sufficient margin of profit.

Foxburg, St. Petersburg & Clarion.

Messrs. Weiss, Britton & Co., of Slatington, Pa., are contractors for this narrow-gauge road, which is to run from the Allegheny Valley at Foxburg, Pa., into the Clarion oil district. They are progressing well with the work and expect to have the track down from Foxburg to St. Petersburg by July 4.

Ohio Falls, Terre Haute & St. Louis.

A company by this name has been organized in Indiana to build a narrow-gauge road from Jeffersonville, Ind., westward to East St. Louis, Ill., about 250 miles; a branch from near Jeffersonville northwest to Terre Haute, about 150 miles, and a branch from the same point north to Brownstown, 15 miles. The capital stock is fixed at $10,000,000.

Pennsylvania.

The following dispatch is published, dated London, England, June 15: "A meeting of the Pennsylvania Railroad stock and bondholders was held in this city to-day. It was resolved to request the directors to prepare accounts yearly. Messrs. Crossfield, Powell and Taylor were appointed a committee of three and authorized to confer with and induce the board to adopt the meeting's proposition. Mr. Smith promised, in behalf of the board, to publish the monthly traffic."

Texas Western.

This road was sold in Houston, Tex., June 5, at private sale and was bought in for a nominal sum by some of the stockholders. The sale did not affect the mortgage, covering only the stockholders' interest.

St. Louis, Hannibal & Keokuk.

At the recent annual meeting it was resolved to decrease the issue of bonds from $20,000 to $12,000 per mile. The Superintendent was authorized to continue work on the extension from Bowling Green, Mo., to Prairieville and to purchase iron for 15 miles of road.

Galveston, Brazos & Colorado.

At a meeting held in Galveston, Tex., recently, President Hurley said that he had made arrangements to build an extension of 30 miles, to a point beyond the Brazos River, some 40 miles from Galveston, provided he could secure cash subscriptions of $45,000. A committee was appointed to see if the amount could be raised.

Philadelphia & Atlantic City.

Tracklaying on this road has been in progress at several points for some time past, and is now so far advanced that the company expects to have the 54 miles from Camden, N. J., to Atlantic City opened early in July. The road is of 3 ft. 6 in. gauge, is parallel to the Camden & Atlantic and at many points but a few hundred yards distant from that road.

Rochester & State Line.

A lot of iron and a construction train have been sent to Machias, N. Y., to begin work on that end of the line, between Machias and Salamanca. On the northern end one train is at work laying iron and another ballasting the track.

Atlantic & North Carolina.

This road has hitherto competed with the Wilmington & Weldon at Goldsboro for local traffic and for business coming over the North Carolina road. Lately, however, an arrangement has been made under which this competition is given up, the Wilmington & Weldon paying the other company a bonus on all freight shipped over its road from Goldsboro, and a considerable increase has been made in freight rates from that point.

Baltimore, Towsontown, Dulaney's Valley & Delta.

At a recent meeting in the interest of this projected road, it was stated that subscriptions to the amount of $4,000 per mile had been secured. The estimated cost is $9,500 per mile. The road is to be of 3 ft. gauge and to run from Baltimore north by east to Delta, in Harford County, near the Pennsylvania line, about 30 miles. It is proposed to extend it eventually into Pennsylvania, to connect with the Peach Bottom road.

West Wisconsin.

The present funded debt of this company consists of $3,443,000 land-grant bonds, $640,000 Southern Extension bonds and $1,500,000 consolidated bonds, $5,583,000 in all. The plan of reorganization proposed is to foreclose and organize a new company, which shall issue $3,000,000 of 6 per cent. first-mortgage bonds and $2,700,000 of 6 per cent. land grant income bonds. The income from land sales and contracts to be applied to payment of interest on the last-named bonds and the

purchase of $30,000 annually for a sinking fund, or a larger amount if the surplus is sufficient. These bonds are also to be received at par in payment for lands.

The new securities are to be issued as follows: $640,000 first mortgage bonds, to be issued for present Southern Extension bonds; $2,083,515 for 50 per cent. of present land-grant bonds and unpaid coupons, and the remaining $276,985 to be used for necessary improvements of the road. Of the land-grant income bonds, $2,083,515 to be issued for the remaining 50 per cent. of present land-grant bonds and coupons, and $616,985 used for improvements, etc. Preferred stock to be issued for consolidated bonds and common stock for present stock, $100 common stock also to be issued with each $1,000 land-grant income bond. This arrangement will slightly increase the company's debt.

Toledo, Peoria & Warsaw.

Hassler's *Financial Report* says: "The following plan for reorganizing the Toledo, Peoria & Warsaw Railroad Company is now being proposed:

"1. The foreclosure of the following mortgages: first mortgage on East Division; first mortgage on West Division; second mortgage on Burlington Branch; second mortgage on West Division; consolidated mortgage on entire line; income mortgage on entire line.

"2. The sale of the road and the formation of a new company, which will issue bonds as follows: first mortgage on entire line, $4,506,000, which will be used to take up bonds represented by mortgages A, B and C, the above-mentioned bonds bearing 7 per cent. Second mortgages on the entire line for $3,900,000 in two series of 7 per cent. bonds, to wit: Series A, of $2,900,000 to take up bonds accrued by mortgages D, E and F, above mentioned, upon which bond interest will be paid in stock or scrip until 1880. Series B, of $1,000,000, will be applied to pay the floating debt of the Toledo, Peoria & Warsaw, and upon which no interest will be paid unless there is a surplus of net earnings after paying interest on first mortgage, and series A of second mortgage.

"The new company will then start out with a funded debt of $8,400,000, upon which it will have to pay a yearly sum of $588,000 interest. The bonded debt of the Toledo, Peoria & Warsaw Company in January, 1874, when it went into the hands of the trustees, was $6,400,000, which was increased about $300,000 by accrued interest and judgment claims, while in the hands of the trustees. It is further proposed to cut down the stock shares in the company from 50 to 75 per cent."

Inverness.

The Inverness Coal, Iron & Railroad Company is making arrangements to build a railroad from its coal and iron property at Broad Cove, on the Bras d'Or, in Cape Breton Island, south by west to the Straits of Canso. The distance is about 30 miles, and the company expects to secure the subsidy voted for a railroad on Cape Breton.

Yardmasters' Mutual Benefit Association.

The annual convention met in Cleveland, O., June 13, 43 delegates being present. The President made his annual address, setting forth the objects and benefits of the association. The Executive Committee reported a total membership of 250, an increase of 75 during the year. The cash receipts were $331.19; expenses, $46.50, leaving a balance of $284.69 on hand.

Some slight changes in the by-laws were made. A proposition to raise the annual assessment from $1 to $3 was postponed for a year. A committee appointed on draw-bars reported that they were unable to recommend any one bar now in use as preferable to others, but in their opinion the greatest danger in coupling cars arises from the difference in the height of cars. They recommended a uniform height for bars, with a flat deadwood two feet long, bolted solid to the end sill of the car, and a cast iron in preference to a wrought iron bar. The recommendations of the committee were agreed to and ordered transmitted to the Master Car Builders' Association, which was in session at the same time. After electing officers, it was resolved to hold the next meeting in Chicago, June 12, 1878.

The convention closed with a tour of inspection through the Lake Shore yards and a steamboat excursion to Put-in-Bay.

Manchester & Fitchburg.

At a meeting held last week it was resolved to have a survey made of this line from Manchester, N. H., southeast to Fitchburg, Mass., about 50 miles. It is one of half a dozen projects by which Manchester hopes to secure a new southern and western connection.

St. Louis, Kansas & Colorado.

At a meeting held last week the St. Louis Chamber of Commerce resolved to call a convention in aid of this projected narrow-gauge road, which is to run from St. Louis westward through Kansas to Denver, Col., with branches north into Nebraska and south into Southern Kansas and the Indian Territory.

Auction Sales of Railroad Securities.

In New York, June 20, at auction, Cincinnati, Wabash & Michigan first-mortgage bonds brought 11; Canada Southern second-mortgage bonds, 1½; Alabama & Chattanooga receivers' certificates, 16; New York & Oswego Midland receivers' certificates, 22½; New Jersey & New York, company's notes, secured by pledge of bonds, $2,982 sold for $1,085.

Union Railroad Transfer & Stock Yards.

This company, which is building what is commonly known as the Belt Line around Indianapolis, has a large force at work grading the road and preparing the ground purchased for the stock yards. The road to be built is about 13 miles long and there will also be a horse-shoe track around the stock-yards about two miles long. It is to have a double track throughout.

Bangor & Calais-Shore Line.

At the annual meeting held June 6 it was voted to pay the expenses already incurred for surveys, etc., by assessment on the towns holding stock. Col. Green, contractor for the Grand Southern Railroad in New Brunswick, submitted an offer to build and equip the road for $10,000 per mile, but it was not accepted, and a vote was passed instructing the directors to make no attempt to contract for building the road until $5,000 per mile cash subscriptions are secured for the whole line from Bucksport to Calais. It was, however, voted to authorize Ellsworth and the towns west to build the 22 miles from Ellsworth to Bucksport, if they see fit, without calling on the towns east for aid.

Col. Green has since offered to build the road from Ellsworth to Bucksport for $178,000, or $8,000 per mile, and it is thought that this offer will be accepted.

The Minnesota State Railrond Bonds.

The election held in Minnesota June 12, on the constitutional amendment authorizing the proposed compromise with the holders of the State railroad bonds, resulted in the defeat of the proposition. Nearly all the leading papers of the State were in favor of the amendment and the larger towns and cities gave it considerable majorities, but the vote in the farming counties was so heavily against it that it was defeated.

Cincinnati, Sandusky & Cleveland.

As soon as the decision of the Ohio Supreme Court on the appeal from the Common Pleas in this case was announced, as noted last week, Mr. Farlow made application to the United States Circuit Court, which had previously appointed him Receiver, for a writ of assistance to put him in possession of the property. After hearing argument the Court decided to grant the writ. It was expected that the Sloane management would make some resistance and preparations were made accordingly, but no resistance was offered. Receiver Lea and General Manager Sloane surrendered the property to Receiver Farlow on the evening of June 14, and he is now in full possession. It is expected that all the Sloane officers will be removed and the old men reinstated.

Cincinnati Southern.

Some doubt has arisen about the lease of the completed part of the road to the common carrier company. It is now claimed that the proposed contract is illegal, as it will virtually make the lessee company and the city of Cincinnati partners in running the road.

The Cincinnati *Enquirer* of June 16 says:

"The board of directors of the Cincinnati Southern Railway Company and the Trustees of the road each held meetings yesterday, but without arriving at any definite conclusion on the question of the lease or the operation of the road by the common carrier company. The members of the syndicate are still hesitating over the differences of opinion on the lease, and are, they say, in no hurry to determine regarding it. The Trustees, they say, cannot be ready with their side tracks, stations, etc., in less than about sixty days, and as a result they feel that a careful consideration of the subject cannot make any serious detriment to the city, and to themselves is only a duty. They are taking legal advice regarding the safety of the lease, and the belief in its soundness is gradually strengthening."

The commission appointed by the Superior Court to consider and report what allowance should be made to the trustees for their services recommends the following allowances: Alphonso Taft, Dec. 14, 1875, to March 9, 1876, $1,000; John Schiff, May 23, 1876, to Jan. 1, 1877, $1,514.28; Philip Heidelbach, Feb. 19, 1875, to Feb. 7, 1876, $2,423.60; W. W. Scarborough, Feb 19 to Nov. 13, 1875, $1,840.26; Henry Mack, March 14, 1876, to Jan. 1, 1877, $2,949.70; R. M. Bishop, Feb. 19, 1875, to Jan. 1, 1877, $6,906.66; Miles Greenwood (President), Feb. 19, 1875, to Jan. 1, 1877, $9,333.33; E. A. Ferguson, Feb. 19, 1875, to Jan. 1, 1877, $13,066.66. The report is very long and is accompanied by a great deal of testimony taken as to general and special services rendered.

Nashville, Chattanooga & St. Louis.

The track is now all laid on the extension of the Jasper Branch from Jasper, Tenn., north by east up the Sequatchie Valley to the coal mines of the Southern States Coal, Iron and Land Company. The track is being ballasted, and regular trains will begin to run about July 1.

St. Louis & Missouri River.

This company, whose organization was noted last week, is a reorganization of the St. Louis County Railroad Company, which has been in existence for several years, but has not succeeded in completing any of its road. The line proposed is a short suburban one from the Union Depot in St. Louis west about six miles.

Nashville & Tuscaloosa.

A company by this name has been organized to build a railroad from Burns, Tenn., 38 miles west of Nashville, on the Nashville, Chattanooga & St. Louis, southward to the Alabama line near Florence, Ala. The distance is about 80 miles.

Missouri River, Fort Scott & Gulf.

Notice is given that holders of coupons due Jan. 1, 1875, on the first-mortgage bonds will be paid one-half in cash and one-half in the company's notes, due Jan. 1, 1878, on presentation of the coupons at the treasurer's office in Boston.

Edenton & Suffolk.

It is proposed to build a railroad from Edenton, N. C., northward to the Seaboard & Roanoke at Suffolk, Va., about 45 miles. The road could be very cheaply built, but the business of the country is not large, and nearly all the places where there is any traffic have water communication.

Memphis & Charleston.

At the recent stockholders' meeting President Wilson made the following statement:

"To take up the Tennessee State bonds, substitute bonds for $976,000 would have to be taken at 75 cents, thus in round numbers taking up $2,000,000 with $1,000,000. These substitute bonds are to be secured by the first lien on the 94 miles of road in Tennessee. So for $750 a $1,000 bond can be secured, bearing 7 per cent. in gold and be secured by first mortgage. The stockholders are requested to take up $350,000 for the present, certainly, and probably no more for all time. If this hitch is over, it is believed that the success of the road is insured, and that in a short time the public will take all the stockholders' bonds, say at 40 cents, if they will sell. These bonds will run for forty years. It is impossible to save the company without some such means. The total bonded debt subsequent to these bonds will then be $4,254,000; capital stock, $5,312,000. The annual capital on all bonds will be $300,000, and the net earnings about $320,000. The road will thus be able to meet its interest, and the president thinks there is no doubt about thus keeping the bondholders from selling out the road. It is believed that if this danger is gotten over, the first mortgage bonds, now at 85 to 88, will appreciate to par. One scheme of improving the condition of the road is the forming of an alliance with roads to Norfolk, and the issuance of a consolidated bond for these roads, with net earnings of four and one-half millions. These bonds could be placed at par and take up every bond of the single roads as it may chance to fall due. The last Legislature debarred the engagement in this purchase by forfeiting the charter of the company in case it was carried out. Such a scheme would make a mutual support of each road, each being a feeder to the other."

Mr. Wilson then went on to advise the action which was subsequently taken, to authorize a lease of the road to the East Tennessee, Virginia & Georgia, on condition that that company should make the necessary advances.

Erie.

The following order has been issued, dated June 15 and signed by Receiver Jewett:

"On and after the 1st proximo a reduction of 10 per cent. will be made in the rate of compensation of all employes of this company not affected by the provisions of Order No. 11.

"The heads of departments, division superintendents and master mechanics will revise their check rolls and adjust the details as affecting various employes, so as to apply this order equitably, avoiding, as far as possible, inconvenient fractional rates. They will, when applied to, advise the parties interested as to the amount of their future compensation.

"This order is rendered necessary by the depressed condition of the business and the reduced earnings of the company."

Order No. 11 referred to is the order issued some months ago which made a similar reduction in all salaries over $100 per month.

The Grand Trunk and the Great Western.

A telegram from London, England, to the Toronto *Globe*, dated June 18, says: "A meeting of the Grand Trunk Railway shareholders, adjourned from April 30, took place to-day. Capt. Tyler, who occupied the chair, stated that the negotiation with the Great Western Railway Company was not concluded. The board of directors of the Great Western road distinctly and firmly refuse the proposal for a division of the net receipts of the two companies, but have proposed a division of the net receipts by competitive traffics. Mr. Childers and Capt. Tyler will proceed to Canada in the autumn to settle the question. There was a moderate attendance, and no discussion took place."

Hoosac Tunnel Line.

Mr. J. Prescott, Manager of the Troy & Greenfield Railroad and Hoosac Tunnel, will receive until June 26, at his office in North Adams, Mass., proposals for building the facade at the last portal of the tunnel. Also for building about 70 feet in length of arching at the west end of the little tunnel near North Adams. Plans and specifications can be seen on application to Chief Engineer W. P. Granger, at North Adams.

St. Louis, Lawrence & Western.

In the case of the Union Trust Company, of New York, against this company, the United States Circuit Court at Leavenworth on June 15 ordered a decree to be entered.

Somerset.

At the annual meeting in West Waterville, Me., June 13, the following statement was made for the past year:

Gross earnings ($1,128 per mile)	$28,202 38
Expenses (71.45 per cent.)	20,148 51
Net earnings ($322 per mile)	$8,053 87

The proposition to change the gange of the road to 3 ft. was brought up and there was a long discussion, the general opinion being strongly against the change. The matter was finally laid over, no action being taken.

Joplin.

The track on this road is now all laid and cars are running over the whole length of the road. It is 38 miles long, from Girard, Kan., on the Missouri River, Fort Scott & Gulf road, southeast to Joplin, Mo. It was built to furnish an outlet to the great lead mines at Joplin and it also serves a number of lately opened coal mines on and near the line.

Philadelphia & Reading.

The resolutions adopted at the meeting of security-holders in London, June 6, were as follows:

Resolved, That with a view to relieve the present position of the Philadelphia & Reading Railroad Company and give time for payment of its floating debt, this meeting approves the following plan:

1. The drawings on the improvement mortgage bonds and general mortgage bonds of the Philadelphia & Reading Railroad Company and the consolidated mortgage bonds of the Perkiomen Railroad Company, to be suspended, each for four years, from and including the next drawing appointed to be made thereon, or such shorter time as may be necessary to pay off the floating debt.

2. One-half of the coupons on said Philadelphia & Reading general mortgage bonds and Perkiomen consolidated mortgage bonds for three years from the due date of and including the current coupon, to be paid in cash at maturity, the remaining half to be represented by five years' scrip, now to be issued, bearing interest at 6 per cent., and convertible at the holders' option into 7 per cent. income mortgage bonds of the company, and payment of such remaining half to be deferred until the scrip comes due.

3. Coupons, when the one-half is paid in cash, are to be deposited with the trustees as security for holders until full payment.

4. Three persons to be named by the meeting to be trustees for bondholders.

5. Trustees to have power to terminate the suspension of drawings and of payment of second half of coupons if circumstances, in their judgment, require it.

6. All the other details and the necessary deeds for carrying the plan into effect to be settled by trustees according to their discretion.

The meeting selected Messrs. Powell, R. Potter and R. McCalmont as the trustees referred to in the resolutions.

Columbus, Chicago & Indiana Central.

In the New York Supreme Court, June 19, argument was heard in the suit of Augustus C. Brown against the Pennsylvania Railroad Company. This is considered a test case and is brought to recover on unpaid coupons from the Pennsylvania Railroad Company as guarantor under the lease of the Columbus, Chicago & Indiana Central road to the Pittsburgh, Cincinnati & St. Louis Company. On behalf of the company objection was made to the form of the suit as against the guarantor alone and it was also claimed that suit to enforce the guarantee could not properly be brought by an individual bondholder. The Court reserved its decision.

Atlanta & Charlotte Air Line.

Sealed proposals will be received at the office of this company, No. 17 Cortlandt street, New York, until June 27, for the building and delivery to the company on its rails at Atlanta, Ga., or Charlotte, N. C., of 225 box and 75 flat cars, complete, as per plans to be seen at the office in New York, as above, or at the General Manager's office, in Atlanta, Ga. The cars to be in every respect first class, built entirely of yellow pine, and each wheel guaranteed to run 40,000 miles, or the builder forfeit the cost of a renewal.

Rio Grande.

A majority in interest of the holders of the $150,000 bonds issued by this company under the mortgage of July 1, 1872, give notice that a meeting will be held in Brownsville, Texas, Aug. 15, at 10 a. m., for the purpose of voting on a proposed change of trustees under the mortgage.

Chicago, Burlington & Quincy.

This company is extending its second track west of Mendota, Ill. It is building a brick freight house at Burlington, Iowa, to be 500 by 40 feet, with walls 16 ft. high. The St. Louis Division (late Rockford, Rock Island & St. Louis) is being put into good working order, to do which requires a great deal of rebuilding of bridges and rolling stock, and laying of new ties and rails. The engines are brought to Huron to be rebuilt.

The Fast Trains.

At a meeting of representatives of the roads interested, held June 15, an agreement was reached which includes the resumption of the time-table of May 14 and the restoration of through passenger rates to the figures then in force. It was further agreed that any road should have the right to make the same time between St. Louis and New York as the Pennsylvania. The old time-table will be resumed on June 25; the old rates were restored June 18.

This settlement takes off the fast trains lately put on between Chicago and New York, but will probably not interfere with the Wabash fast train from St. Louis, which first caused the present trouble, but it is agreed that Omaha tickets shall not be sold by this route.

Windsor & Annapolis.

For several years this company has worked under lease the Windsor Branch, from Windsor, N. S., to Windsor Junction, 32 miles, which connects its road with Halifax. This Windsor Branch was built by Nova Scotia at the same time with the Nova Scotia Railway from Halifax to Pictou, and with that line was transferred to the Dominion of Canada at the time of the confederation, the main line becoming part of the Intercolonial. Besides its lease of the Windsor Branch, the Windsor & Annapolis Company has running powers over the 13 miles of the Intercolonial from the Junction to Halifax. Last year the Windsor Branch was

granted as a bonus to the Western Counties Company, which is building a line from Annapolis, the western terminus of the Windsor & Annapolis, to Yarmouth. Recently the Government notified the Windsor & Annapolis Company that the Windsor Branch must be surrendered to the Western Counties Company on Aug. 1. The company, however, claims that its lease has not expired and gives notice that it will refuse to surrender possession.

Railroad Employes Mutual Benefit Association.

The seventh annual convention of this association met in Chicago, June 13, a large number of delegates being present. The President delivered his annual address, commending the plan on which the association works, and claiming that members receive a larger insurance than in any other method. During the year ending May 31, 25 members died and three assessments for expenses were made. The average assessments was $26 for each member.

The Executive Committee reported as follows:

Cash, June 1, 1876		$1,436 29
Receipts for the year		51,662 70
Total		$53,098 99
Paid death losses	$49,530 00	
" expenses	2,307 04	
		51,837 04
Balance, June 1, 1877		$1,261 95

The total amount paid out for losses since the organization in 1870 is $225,179.

The convention adopted several amendments to the constitution and by-laws, the principal one being to reduce the commission of agents from 5 to 3 per cent.

Kankakee & Illinois River.

A company by this name has been organized in Illinois to build a railroad from the Indiana line at the Kankakee River crossing westward to Bureau Junction, about 100 miles. The capital stock is to be $1,000,000. The line covers the Illinois section of the unfinished Plymouth, Kankakee & Pacific road, lately sold under foreclosure.

Montgomery & Eufaula.

The United States Circuit Court for Alabama has ordered the sale of this road under a judgment for about $60,000 sued out by the South & North Alabama Company. The order directs the sale to take place Oct. 1. The amount of the judgment and the court costs will be required in cash from the purchaser. The road extends from Eufaula, Ala., west by north to Montgomery, 81 miles.

Covington, Columbus & Black Hills.

It is reported that a party of New York capitalists have bought a controlling interest in this road, and that they will at once proceed with work on its extension westward.

Columbus, Chicago & Indiana Central.

Notice is given that A. Iselin & Co., No. 48 Wall street, New York, will purchase the coupons due Jan. 1, 1877, on Columbus & Indianapolis first and second-mortgage bonds and Columbus & Indianapolis Central first-mortgage bonds.

Lehigh Valley.

The net earnings from transportation, coal tonnage and average receipts per ton on coal carried from Mauch Chunk to tide-water for the six months ending May 31 were:

	Net earn.	Tons coal.	Av. per ton.
1876-77	$1,139,439 13	1,977,477	$0 86
1875-76	1,279,827 37	1,596,098	1 82
1874-75	357,718 79	839,086	2 31
1873-74	1,364,832 08	1,898,880	....

The board has decided to make the July quarterly dividend only 1 per cent., instead of 1¼ as formerly.

RAILROAD LAW.

Vendor's Liens on Equipment in Illinois.

In the case of the Rhode Island Locomotive Works against R. G. Hervey and the Paris & Decatur Company, the United States Supreme Court, after noting the principle that transfers of property must be governed by the laws of the State in which they are made, decides that this case must be governed by the law of Illinois. The locomotive in this case was sold under a contract by which it was to be paid for in installments and was to remain the property of the vendors until paid for. The Illinois law regards such a contract as equivalent to a chattel mortgage and requires it to be recorded. Under this law the Court now decides that, as the contract was not recorded as required, it was not valid as against a third party, and the ownership or lien of the vendor was no protection against the attachment or sale of the engine on the suit of creditors of the railroad company. Such a contract must be considered a conditional sale and not as a lease.

Minnesota Railroad Legislation.

The late Legislature of Minnesota passed a law authorizing railroad companies to make any agreement with the holders of its securities or of any class of securities, such agreement to be binding upon receiving the assent of two-thirds in amount of the holders of such securities and of two-thirds of the stock. Copies of such agreement shall be attached to all the bonds or certificates affected and a copy filed with the Secretary of State. Another law authorizes the issue of special and preferred stock and income certificates on vote of two-thirds of the common stock.

A general aid law authorizes any municipal corporation to subscribe to the stock of a railroad company an amount not exceeding 10 per cent. of the valuation of its taxable property, such subscription to be payable in bonds or in money by installments. No such subscription shall be made unless authorized by a vote of a majority of legal voters at a special election, or by a petition signed by a majority of the legal voters, and the subscription may be made dependent upon the time of completion of the road. In case of a county subscription, there must be not only a majority of the voters, but also a majority of the election precincts in its favor. No subscription shall be made payable before the road is completed to or through the town or county making the subscription.

An act relating to fences provides a fine of from $10 to $50 and imprisonment for not more than 30 days for any person who shall break down a fence or wilfully leave open a gate on a railroad track. Companies may provide locks for gates at private crossings, giving the owner the key, and shall, after doing so, be exempt from liability for damages to cattle which may get upon the track at such crossing.

Another law prohibits the crossing of railroad bridges or trestles on foot or in a vehicle under penalty of $50 fine and 60 days' imprisonment. The same law also provides $1,000 fine and one year's imprisonment for any person wilfully injuring equipment or damaging track or bridges; in case death or injury is caused by such action, the party shall be liable to punishment as provided by law for unlawfully or maliciously causing death or injury in other ways.

Another law requires returns of gross earnings to be made yearly, for the year ending Dec. 31, to be delivered to the Railroad Commissioner by Feb. 1. Companies paying the tax on gross earnings semi-annually must make two returns, one by July 20 for the six months ending June 30 and one by Jan. 20 for the six months ending Dec. 31. Companies having land grants must make by April 1 a statement of all lands sold for the year ending Dec. 31 next preceding.

The Legislature also proposed an amendment to the constitution, which provides that each stockholder in any corporation shall be liable for all unpaid installments on stock owned by him, or transferred for the purpose of defrauding creditors.

Flagmen at Street Crossings.

The New York *Register* says: "In McGrath against the New York Central Railroad Company the Supreme Court held that the absence of any flagman at a railroad street crossing in a city was no evidence of the company's negligence in an action for injuries sustained by a passer-by. The cause was tried again, and then the plaintiff, though precluded by the former decision from proving the absence of the flagman as evidence of the company's negligence, was allowed to prove it as tending to show that he himself was free from negligence. The Supreme Court held this proper; but, on appeal, were overruled by the Court of Appeals, who held that it was not competent on that ground. On another trial it was offered, coupled with proof that a city ordinance required a flagman; but the Court excluded it wholly. The Court of Appeals reverse this decision in 63 N. Y., 522. The controlling consideration seems to have been that the existence and violation of the city ordinance made the fact admissable; but two of the Judges were of opinion that the presence or absence of a flagman was one of the surrounding circumstances which are always admissable in proof, to give the jury the situation under which the disaster occurred."

Failure to Stop a Train.

In the case of Birney against the Indianapolis, Bloomington & Western Company the Illinois Supreme Court held:

Where a railroad train wrongfully fails to stop to take on a passenger, he is entitled to recover nominal damages, and such actual damages as he may sustain by reason of such delay, but he has no right to inflict injury on himself to enhance the damages, as by walking to the next station, instead of waiting for the next train or procuring other conveyance, and thereby causing sickness.

North Carolina Railroad Law.

A general law recently passed by the North Carolina Legislature and approved by the Governor authorizes any railroad company in that State to buy and maintain steamboats to be run in connection with the road, for the transportation of passengers and freight.

Accidents at Road Crossings.

In Damerell against the Chicago, Burlington & Quincy Company, the Illinois Supreme Court held:

1. The statute of Illinois only requires that, on approaching a crossing, the bell of the engine shall be rung or the whistle sounded, nor is it the duty of the engine-driver, on reaching a crossing, to stop his train for the purpose of avoiding a collision with a team which he may see approaching.

2. In the case in judgment, where the evidence showed that had the driver of the team kept a look out he could have seen the train from the time it came out of a cut which hid it from his sight to the crossing, a distance of about sixty yards, and that he could have seen the smoke and steam of the engine before it emerged from the cut. *Held*, that the driver was guilty of want of ordinary care and prudence in going upon the crossing. *He d, further*, that in such cases the burden of proof is on the plaintiff to prove that he was exercising ordinary care and diligence at the time the accident occurred.

3. It is the duty of persons about to cross a railroad track to look about them and see if there is danger, and not to go recklessly upon the track, but to take the proper precautions themselves to avoid accidents at such places. Want of such precautions has been held gross negligence.

Measure of Land Damages.

In the case of McGinnis against the Chicago, Burlington & Quincy the Illinois Supreme Court held:

Where, by the charter of a city, its local authorities are vested with exclusive control over the streets, these authorities grant permission to lay down railway tracks along a street, the owners or occupants of property fronting on such street cannot enjoin the laying of such tracks, nor be allowed any damages or compensation for such use of a street.

The court below allowed evidence to be given of what would have been the value of the property and its rental value without the railroad, and what it was with the railroad; that this was adopting an erroneous rule of damages, and this is said without reference to the question of the bearing of the provision of the constitution of 1870, that "private property shall not be taken or damaged for public use without just compensation," upon a railroad constructed before the adoption of the constitution. * *

To estimate the damages, as the difference between the value of the property without the railroad and with the railroad, would be to allow a recovery for damage to the property from all causes whatsoever by reason of the railroad, and so of the rental value in such respect, that if there was any liability in respect of the dust, smoke and cinders, the inquiry should have been confined to the question of what material damage, if any, was done to the property by the throwing of dust, smoke and cinders upon it.

Condemning Right of Way.

In the case of Quarles against the Missouri, Kansas & Texas, the Missouri Supreme Court held:

In a proceeding to condemn land for the right of way of the Tebo & Neosho Railroad, three commissioners were appointed, one of whom declined to act; the other two proceeded to assess damages and make a report, which was confirmed by the Circuit Court, without objection. In an action of ejectment by the owner of the fee against the railroad company and its lessee, *Held*, (1.) That the failure of one of the commissioners to act, at most would constitute an irregularity merely, and that the report after confirmation would not be subject to collateral attack on that ground; (2.) That a majority of the commissioners were authorized to act, and that hence the assessment and report were regular and valid.

Injuries to Employes.

In the case of Miller against the Baltimore & Ohio the United States Circuit Court for the Southern District of Ohio held as follows: * * * * * * * *

3. As a general rule the master is not liable to his servant for injuries accruing to him for the negligence of a fellow servant engaged in a common employment. And all agents and employes who are engaged in the general business of operating a railroad are fellow servants.

4. The master, however, is bound to use ordinary care to employ and retain in his service competent servants.

5. If, therefore, injury should result to a brakeman upon a railroad from the negligence of an incompetent conductor, engineer or brakeman, in whose employment the railroad did not use ordinary care, it would be liable.

6. In such case the plaintiff would be entitled to compensatory damages only, unless such injury was "the result of willful misconduct, or of that reckless indifference to the rights of the plaintiff, which is equivalent to an intentional violation of them."

The first two heads relate to purely technical legal points.

Grade Crossings in Massachusetts.

A law recently passed by the Massachusetts Legislature provides that no highway or townway shall hereafter be laid out across a railroad at a level therewith, nor shall any railroad be laid out and constructed across a highway or townway at a level therewith without the consent in writing of the Board of Railroad Commissioners, in addition to the authority of the County Commissioners, as now required.

ANNUAL REPORTS.

Keokuk & Des Moines

This company owns a line from Keokuk, Ia., northwest to Des Moines, 161 miles. It was formerly part of the Des Moines Valley road and was acquired by the present owners through foreclosure. The present report is for the year ending March 31, 1877.

The equipment consists of 18 engines: 8 passenger, 2 chair, 1 smoking, 4 baggage and 8 way cars; 204 box, 101 stock, 87 coal and 51 flat cars; 74 service cars.

The liabilities are as follows:

Common stock		$2,400,000 00
Preferred stock		1,524,600 00
Total stock ($24,376 per mile)		$3,924,600 00
Bonds ($15,868 per mile)		2,554,800 00
Bills and accounts payable		174,314 41
Total ($41,327 per mile)		$6,653,714 41

The company holds $220,000 of its own bonds, of which $148,000 are pledged as security for bills payable. There were sold during the year $100,000 first-mortgage bonds at 85, and $56,408.04 was expended for construction.

The work done during the year was as follows:

	1876-77.	1875-76.	Inc. or Dec	P. c.
Passenger train mileage	203,374	204,836	Dec.. 1,462	0.7
Freight train mileage	187,447	221,419	Dec.. 33,972	15.3
Locomotive mileage	615,322	709,365	Dec.. 94,043	13 3
Passengers carried	194,240	218,684	Dec.. 24,444	11.2
Passenger mileage	6,473,169	7,667,358	Dec..1,194,189	15.6
Tons freight carried	196,756	242,359	Dec .. 45,603	18.8
Tonnage mileage	15,874,149	16,760,918	Dec.. 886,769	5.3
Av. pass. train load, No.	31.83	37.43	Dec.. 5.60	15.0
Av freight train load, tons	84.69	75.70	Inc .. 8.99	11.9
Receipt per pass. per mile	2.83 cts.	2.88 cts.	Dec.. 0.05 cts.	1.7
Receipt per ton per mile..	2.23 "	2.83 "	Dec.. 0.60 "	21.2

The earnings for the year were:

	1876-77.	1875-76.	Inc. or Dec.	P. c.
Freight	$354,035 76	$474,240 97	Dec.. $120,205 21	25.3
Passengers	186,558 15	223,031 57	Dec.. 36,473 42	16.4
Mail and express	24,891 85	27,727 46	Dec.. 2,835 61	10.2
Miscellaneous	16,513 67	16,339 09	Inc .. 174 58	1.1
Total	$581,999 43	$741,339 09	Dec.. $159,339 66	21.5
Expenses	411,556 16	514,501 01	Dec.. 102,944 85	20.0
Net earnings	$170,443 27	$226,838 08	Dec.. $56,394 81	24.9
Gross earnings per mile	3,614 90	4,604 59	Dec.. 989 69	21.5
Net earnings per mile	1,058 65	1,408 93	Dec.. 350 28	24.9
Per cent. of exps..	70.70	69.40	Inc .. 1.30	1.9

The usual repairs and renewals of track and bridges were made, but no extensive work undertaken The expenses were somewhat increased by a severe Winter and heavy Spring rains.

The falling off in earnings is due to partial failure of crops and to the working of the Iowa railroad law. Some improvement may be expected this year, the road having been reduced from Class A to Class B, which permits it to charge higher rates.

The report gives a long account of the trouble with the Des Moines & Fort Dodge Company about the Des Moines bridge. The stockholders are now asked to give the necessary authority to build a new bridge, depot and yard there, independent of the other company. To supply the means for this and to fund the floating debt, it is proposed that the stockholders take the bonds remaining in the treasury at par.

Grand Rapids & Indiana.

This company owns a line from Fort Wayne, Ind., northward to Petoskey, Mich., 332 miles. It works under lease the Cincinnati, Richmond & Fort Wayne road from Fort Wayne to Richmond, 90 miles, and under agreement the Traverse City road from Walton, Mich., to Traverse City, 26 miles, but the earnings of those lines are not included in the report, which is for the year ending Dec. 31, 1876.

The liabilities are as follows:

Capital stock ($8,434 per mile)			$2,800,000
First-mortgage bonds, guaranteed		$4,000,000	
" " unguaranteed		3,809,000	
Income bonds		191,000	
Total bonds ($24,096 per mile)			8,000,000
Coupons unpaid, due to Pennsylvania R. R. Co..		$787,193	
" " " " Pennsylvania Company..		154,700	
			941,893
Bills and accounts payable, etc			480,436
Total ($36,814 per mile)			$12 222,329

The company has a very large land grant, sales from which have been somewhat slow during the year.

The work done was as follows:

	1876.	1875.	Inc. or Dec.	P. c.
Passengers carried	513,870	501,977	Inc .. 11,893	2.3
Passenger mileage	14,448,942	13,907,593	Inc .. 541,349	3 9
Tonnage mileage	33,713,086	35,764,557	Dec.. 2,051,471	5.7
Av. rate per pass. per mile	2.845 cts.	3.035 cts.	Dec.. 0.190 ct.	6.3
Av. rate per ton per mile	1.696 "	1.773 "	Inc .. 0.123 "	6.9

Early in the year rates on lumber, the chief traffic over the largest part of the road, were considerably increased, but since then they have been gradually falling off, until they are about 10 per cent. below 1875. The earnings for the year were:

	1876.	1875.	Inc or Dec.	P. c.
Freight	$639,201	$634,072	Inc .. $5,129	0.8
Passengers	414 421	427,463	Dec.. 13,042	3.1
Express and mails	35,225	37,055	Dec.. 1,830	4.9
Miscellaneous	48,692	45,151	Inc .. 3,541	7.8
Total	$1,137,539	$1,143,"41	Dec.. $6,202	0.5
Expenses	821,032	876,632	Dec.. 55,600	6.3
Net earnings	$316,507	$267,109	Inc .. $49,398	18.5
Gross earn. per mile.	3,426	3,445	Dec.. 19	0.5
Net " " "	953	805	Inc .. 148	18.5
Per cent. of exps	72.18	76.65	Dec.. 4.47	5.7

The report says: "Under the arrangement adopted at the last annual meeting, $191,000 of interest-bearing gold bonds have been redeemed and canceled, and we have issued instead the same amount of income bonds. The sales of land upon which the redemption depends increased very largely during the last six months of the year. There is no other change in the funded debt. The interest upon the guaranteed bonds has been paid by the guarantor; that upon the unguaranteed bonds by our company. The net earnings are more than sufficient for the interest upon unguaranteed bonds, which for the year was $302,240, and as the redemption and exchange progresses the amount will be constantly diminishing. In addition to the debt to the guarantor, as above-mentioned, our floating debt has increased $75,000 over the previous year—due in part to construction and equipment expenditures, payment on account Cincinnati, Richmond & Fort Wayne guarantee, and demands for right of way—as appears upon the Auditor's report. * *

"The depression in all agricultural interests along the line of the Cincinnati, Richmond and Fort Wayne road has continued

through the past year. The gross revenue decreased $34,628, and expenses $5,989, making net decrease in earnings, as compared with previous year, of $28,639. The debt to the Grand Rapids & Indiana Railroad Company for advances to pay coupons now amounts to $108,924."

Cheshire.

The thirty-second annual report of this company covers the year ending Sept. 30, 1876, during which the company worked its main line, from Fitchburg, Mass., to Bellows Falls, Vt., 64 miles, and the Ashuelot road, from Keene, N. H., to South Vernon, 24 miles. Of the main line 10½ miles, from Fitchburg to South Ashburnham, is leased from the Fitchburg Company. Since the close of the year the lease of the Ashuelot road has been surrendered. There are 14.21 miles of siding on the line owned.

The equipment consists of 31 engines and 2 snow-plows; 22 passenger, 8 baggage and 2 postal cars; 184 box, 27 hay, 34 stock, 139 platform, 4 caboose and 1 drovers' car; 11 wood, 10 gravel, 2 derrick and 1 wood-sawyers' saloon car.

The general account, which is brought forward to March 1, is as follows:

Stock ($40,249 per mile)	$2,153,300 00
Bonds ($15,305 per mile)	816,800 00
Floating liabilities, notes, etc	86,529 00
Earnings account	120,189 05
Profit and loss	36,250 75
Total ($60,057 per mile)	$3,213,068 80

The company owns $165,000 Ashuelot bonds; woodland valued at $45,000, and holds $52,669.33 in cash and cash assets, and materials and supplies inventoried at $155,747.36.

The work done was as follows:

	1875–76.	1874–75.	Inc. or Dec.	P.c.
Train mileage	613,611	633,277	Dec.. 19,666	3.1
Passengers carried	141,048	161,892	Dec.. 20,844	12.9
Passenger mileage	4,451,002	5,250,743	Dec.. 799,741	15.2
Tons freight carried	437,940	415,714	Inc.. 22,226	5.3
Tonnage mileage	23,689,226	23,082,087	Inc.. 607,139	2.6

The earnings for the year were:

	1875–76.	1874–75.	Inc. or Dec.	P.c.
Passengers	$155,119 83	$180,619 91	Dec..$25,500 08	14.1
Freight	408,283 45	437,951 10	Dec.. 29,667 65	6.8
Exp. mails, etc	23,328 07	37,693 69	Dec.. 14,365 62	38 1
Total	$586,731 35	$656,264 70	Dec..$69,533 35	10.6
Expenses	461,889 89	581.444 84	Dec. 119,554 97	20.6
Net earnings	$124,841 48	$74,819 86	Inc..$50,021 62	66.9
Gross earn. per mile.	6,667 40	7,457 55	Dec.. 790 15	10.6
Net " " "	1,418 65	850 23	Inc.. 568 42	66.9
Per cent. of exps	78.72	88.00	Dec.. 9.28	10.5

The net result of the year was as follows:

Net earnings		$124,841 48
Rental for use of track, Fitchburg to South Ashburnham	$54,000 00	
Balance of interest paid	49,325 65	
		103,325 65
Net balance		$21,515 83

During the year 600 tons of steel rails, 118 tons of re-rolled iron rails, 587 tons of repaired iron rails and 27,431 new ties were used in renewals.

The directors' report says: "It will be observed that although our net earnings for the last year were small compared with some years, still they were better than those of the previous year. The earnings for the last six months, since the close of our report for Oct. 1, 1876, still show a large decrease. We are using every possible exertion to reduce our expenses to meet these large reductions in our earnings.

"The competition in Western freights has continued throughout the year, and the trunk lines have forced upon us much business which has been of very little profit, considered by itself, without reference to incidental advantages contingent thereto.

"We have lately purchased 600 tons of steel rails, which are now being put into the track, and will make about one-half of the whole road laid with steel; our equipment and track are still kept in excellent condition."

Detroit & Milwaukee.

This road extends from Detroit, Mich., north by west to Owosso, and thence nearly due west to Grand Haven, 189 miles. It is in the hands of a receiver under foreclosure proceedings, and his latest report is for the year ending December 31, 1876.

The bonded debt, not including unpaid coupons, is $7,123,100, or $37,688 per mile. The only interest paid is on $805,000 of underlying sectional bonds. Arrangements for the reorganization of the company have been completed. The old floating debt is $328,460.70; the Receiver's debts amount to $269,199.14.

The work done was as follows:

Locomotive mileage	929,790
Cost of repairs per mile	4.67 cts.
Car mileage	10,275,446
Cost of repairs per mile	1.10 cts.
Tons freight carried	375,284
Average receipt per ton	$1.52¾.

The freight tonnage showed an increase of 96,073 tons, or 34.4 per cent., but there was a considerable decrease in rates.

The earnings were as follows:

	1876.	1875.	Inc. or Dec.	P. c.
Passengers	$359,663 18	$371,500 04	Dec..$11,836 86	3.2
Freight	573,245 96	478,318 71	Inc.. 94,927 25	19.8
Other sources	44,545 91	52,827 94	Dec.. 8,282 03	15.7
Total	$977,455 05	$902,646 69	Inc.. $74,808 36	8.3
Working expenses	841,440 97	812,223 77	Inc.. 29,217 20	3.6
Taxes and insurance	43,724 83	56,237 51	Dec.. 12,512 68	22.2
Total	$885,165 80	$868,461 28	Inc.. $16,704 52	1.9
Net earnings	$92,289 25	$34,185 41	Inc.. $58,103 84	169 9
Gross earn. per mile.	5,171 72	4,775 91	Inc.. 395 81	8.3
Net " " "	488 30	180 88	Inc.. 307 42	169.9
Per cent. working expenses	86.08	89.98	Dec.. 3.90	4.3
Per cent all exp's	90.55	96.21	Dec.. 5.66	5.9

The working expenses were increased by the defective condition of the equipment, much of which is old and nearly worn out. Near the close of the year four heavy freight engines were added, with a great gain in economy. There were also added two passenger and two baggage cars, 29 box and one boarding car, and Miller platforms were fitted on the passenger equipment.

There are now in the track 120 miles of steel rails, 20 miles of iron rails laid in 1875, and 49 miles of old iron rails, of which one-half need renewal this year.

Train Accidents in May.

The following accidents are included in our record for the month of May:

REAR COLLISIONS.

On the 2d a freight train on the Chicago & Alton road ran into the rear of a preceding freight at Elwood, Ill., wrecking several cars and killing a brakeman.

On the 5th a freight train on the Central Vermont ran over a misplaced switch and into some cars standing on a siding at Farnham, P. Q., wrecking four flat cars.

On the 11th a freight train on the Grand Trunk road ran into some cars which had started in some unknown way and run from a siding upon the main track at Danville, Me. The engine and several cars were wrecked and two men hurt. The wreck caught fire and 12 cars were burned up.

Early on the morning of the 24th a freight train on the River Division of the Chicago, Milwaukee & St. Paul ran into some flat cars which had been left on the track near Winona, Minn. The engine and two cars were damaged, the engineman hurt and the road blocked several hours.

On the evening of the 24th an express train on the Pennsylvania Railroad ran into the rear of a freight train at Marysville, Pa., disabling the passenger engine and wrecking three freight cars.

BUTTING COLLISIONS.

Early on the morning of the 12th there was a butting collision between two engines on the Missouri River, Fort Scott & Gulf road, near Gillis Crossing, Kan. Both engines were badly broken.

On the morning of the 17th an east-bound express train on the Delaware, Lackawanna & Western ran into the head of a west-bound freight, which was just backing into a siding at Morris Plains, N. J. Both engines and several freight cars were badly damaged. It is said that the usual signals were not displayed to warn the express. Both enginemen and the express messenger were badly hurt.

On the morning of the 20th, on the Erie Railway, near Adrian, N. Y., there was a butting collision between two freight trains by which one engine was damaged and several cars wrecked. The wreck caught fire and 12 cars were burned up. The road was blocked nine hours. The accident is said to have been caused by a misunderstanding of the orders given to one of the trains.

On the morning of the 28th, on the Intercolonial Railway, near Athol, N. S., there was a butting collision between an extra freight and an extra coal train, at a point where two heavy grades meet, and both trains were running at unusual speed to take the opposing grade. Both engines, 12 box cars and 15 coal hoppers were piled up in a very bad wreck, and the track was blocked three hours. The accident was caused by a mistake of the train dispatcher at Truro.

CROSSING COLLISION.

On the afternoon of the 8th, a coal train on the Philadelphia & Reading road ran into an inspection engine on the Mine Hill Branch at Cressona Crossing, Pa., damaging the inspection engine. The crossing signals were set for the coal train.

DERAILMENTS, BROKEN RAIL.

On the 8th, the engine of a passenger train on the New Brunswick Railway was thrown from the track by a broken rail near River Muniac, N. B., and badly damaged. The road was blocked all night.

DERAILMENTS, BROKEN AXLE.

On the 1st the engine of a way train on the New York Central & Hudson road was thrown from the track near Croft's, N. Y., by the breaking of a driving axle under the engine.

On the morning of the 5th several cars of a freight train on the Fitchburg Railroad were thrown from the track and wrecked by a broken axle, near Wachusett, Mass.

DERAILMENTS, BROKEN TRUCK.

On the 16th six cars of a freight train on the Chicago & Lake Huron road were thrown from the track near Charlotte, Mich., by the breaking of a truck under one of them. Three cars went down a high bank and were wrecked.

On the morning of the 23d eight cars of a freight train were thrown from the track near Cameron, Mo., on the Hannibal & St. Joseph road, by the breaking of a truck under one of them.

DERAILMENTS, BROKEN BRIDGE.

On the 29th a steam shovel attached to a freight train on the Wabash Railway struck and pulled down one span of the bridge over the Illinois River at Philip's Ferry, Ill. Four cars fell into the river, the conductor and a brakeman going down with them and both were badly bruised.

DERAILMENTS, SPREADING OF RAILS.

On the afternoon of the 2d a passenger train on the Keokuk & Des Moines road was thrown from the track near Cliffland, Ia., by the spreading of the rails, and several cars were badly broken. A tramp, who was stealing a ride between two cars, was killed, the baggageman fatally hurt, four trainmen and thirteen passengers less severely injured.

On the morning of the 21st the engine of a passenger train on the Indianapolis, Cincinnati & Lafayette road was thrown from the track near Lafayette, Ind., by the spreading of the rails. The engine upset and was damaged.

DERAILMENTS, WASH-OUT.

On the evening of the 18th an excursion train on the Atchison, Topeka & Santa Fe road ran into a wash-out near Ellinwood, Kan., wrecking the train, killing one passenger and injuring the fireman, a brakeman and five passengers.

On the night of the 30th a freight train on the Kansas Pacific road ran into the gap where a small bridge had been washed out by a freshet between Fort Harker and Ellsworth, Kan. The engine and nearly all the cars were piled up in a bad wreck.

DERAILMENTS, ACCIDENTAL OBSTRUCTION.

On the morning of the 17th five cars of a freight train on the Western & Atlantic road were thrown from the track by a slight obstruction near Boltonville, Ga. The track was blocked all night.

On the morning of the 18th a mail train on the Detroit & Milwaukee road was thrown from the track near Spring Lake, Mich, by a loose rail, which was left near enough to the track to catch in the trucks of the baggage car. The baggage and mail cars were damaged.

DERAILMENTS, CATTLE.

On the evening of the 5th a freight train on the Northern Central struck a team at a road crossing near Crescent, Pa., and several cars were thrown from the track and piled up in a bad wreck. The driver of the train was hurt.

On the afternoon of the 13th an extra freight train on the North Pennsylvania road ran over a cow near Rockhill, Pa., and eight cars were thrown from the track, blocking the road several hours. A trainman was hurt.

On the 18th a special inspection train on the Green Bay & Minnesota road struck two cows at a bridge near Merrillan, Wis., and the engine was thrown from the track, but the guard timbers prevented it from going off the bridge. The train had on board the Governor and Railroad Commissioner of the State and several officers of the road.

On the morning of the 21st a passenger train on the Allegheny Valley road ran over a cow near Emlenton, Pa., throwing the engine from the track and blocking the road two hours.

On the morning of the 23d a freight train on the Kansas Pacific road ran over a horse near Fairmount, Kan., throwing the engine and eight cars from the track and blocking the road all day.

DERAILMENTS, MISPLACED SWITCH.

On the morning of the 16th as a freight train on the Peoria & Rock Island road was going up the grade at Peoria, Ill., with a helping engine at the rear end of the train, the forward engine struck a misplaced switch and left the track. The helper kept on, driving the first engine into a bank, damaging it and also several cars.

On the evening of the 19th the engine of a freight train on the Nashville, Chattanooga & St. Louis road was thrown from the road by a misplaced switch at Cowan, Tenn. The engine upset, killing the engineman and injuring the fireman.

On the evening of the 22d the engine and five cars of a freight train on the Pittsburgh Division of the Baltimore & Ohio were thrown from the track by a misplaced switch at Hazlewood, Pa. The engine was upset and badly damaged.

DERAILMENTS, UNEXPLAINED AND OTHERWISE.

On the morning of the 1st a freight train on the Galveston, Harrisburg & San Antonio road ran off the track near Peirce Junction, Tex. The engine was badly broken, the engineman and fireman scalded so that both died in a few hours, and two trainmen and a tramp, who was stealing a ride, less severely hurt.

On the 2d a freight train on the Galveston, Harrisburg & San Antonio road ran off the track near Bandon, Texas, blocking the road 12 hours.

On the afternoon of the 3d a construction train on the Philadelphia & Atlantic City road ran off the track at Williamstown Junction, N. J., wrecking several cars, killing one man, injuring two others fatally and four less severely.

On the afternoon of the 4th two cars of a mixed train on the Prince Edward's Island road ran off the track near Georgetown, P. E. I., wrecking two box cars.

On the night of the 4th a car of a freight train on the Erie Railway ran off the track near Hawthorne, N. J., and was some what damaged.

On the afternoon of the 10th a freight train on the Intercolonial Railway ran off the track at Amherst, N. S., blocking the road three hours.

About noon on the 14th a coal train on the Delaware, Lackawanna & Western road ran off the track in Hoboken, N. J., wrecking several cars.

On the 14th four cars of a freight train on the Lake Champlain & Moriah road broke loose on a heavy grade and, running down at a great speed jumped from the track on a sharp curve and were wrecked.

On the afternoon of the 15th a freight train on the Chicago, Rock Island & Pacific road ran off the track near Gallatin, Mo., blocking the road six hours.

On the afternoon of the 22d as an engine with two freight cars attached was standing on the Philadelphia, Wilmington & Baltimore track on Washington avenue, Philadelphia, the engineman being absent for a minute, an insane man jumped on the engine and started it. It ran down the street to the wharf at its end at a great speed and struck the bumpers on the wharf with such force that the engine was upset and the two cars broke loose and went into the river. The insane man was thrown into the river and drowned.

Very early on the morning of the 23d three cars of a freight train on the New York, New Haven & Hartford road ran off the track at New Rochelle, N. Y., and were badly broken.

On the morning of the 24th three cars of a freight train on the Erie Railway ran off the track in Port Jervis, N. Y.

BOILER EXPLOSION.

About noon on the 16th the engine of a freight train on the Baltimore & Ohio exploded its boiler near Campbell's, O., wrecking the engine, throwing nine cars from the track, killing a brakeman and injuring the engineman and fireman. The crown sheet was torn off and the engine thrown down a bank.

OTHER ACCIDENTS.

On the afternoon of the 10th a car loaded with wood on a freight train on the California Pacific road caught fire near Creston, Cal., and was destroyed.

On the 17th a car in a freight train on the Somerset Railroad caught fire near Norridgewock, Me., and was destroyed.

On the morning of the 14th, as a freight train on the Atlantic & Great Western road was on a grade near Saegertown, Pa., one of the driving axles broke close to the hub of the wheel, but the engine did not leave the track.

This is a total of 46 accidents, whereby 12 persons were killed and 41 injured. Eight accidents caused the death of one or more persons each; five caused injury but not death, while in 33, or 71.7 per cent. of the whole number, there was no one hurt sufficiently for record.

These accidents may be classed as to their nature and causes as follows:

COLLISIONS:		
Rear collisions	5	
Butting collisions	4	
Crossing collision	1	
		10
DERAILMENTS:		
Unexplained	11	
Broken rail	1	
Broken axle	2	
Broken truck	2	
Broken bridge	1	
Spreading of rails	2	
Wash-out	2	
Accidental obstruction	2	
Cattle on track	5	
Misplaced switch	3	
Runaway engine	1	
		32
Boiler explosion	1	
Cars burned while running	2	
Broken axle not causing derailment	1	
Total		46

Two collisions were caused by mistakes in giving or receiving orders; one each by a misplaced switch, by failure to use signals and by cars blown out of a siding. The bridge which failed had a truss broken or torn down by the arm of a steam shovel which was being hauled over it. Ten accidents are traced directly to defect or failure of road or equipment. Eight collisions were between freight and two between freight and passenger trains; nine derailments were of passenger and 23 of freight trains, and all the other accidents were to freight trains.

As compared with May, 1876, there is a decrease of 18 accidents, of one in the number killed and of 75 in that injured.

The month is chiefly remarkable for the very few accidents recorded, the number being the smallest in any month for several years. The number of collisions is even below the usual proportion, but misplaced switches are again increasing in number.

For the year ending with May the record is as follows:

	No. of accidents.	Killed.	Injured.
June	52	19	73
July	79	17	69
August	78	22	76
September	106	41	133
October	103	40	115
November	96	23	135
December	88	94	141
January	147	10	146
February	56	5	41
March	58	9	31
April	69	13	34
May	46	12	41
Totals	978	305	1,087

The averages per day for the month were 1.48 accidents, 0.39 killed and 1.32 injured; for the year they were 2.68 accidents, 0.84 killed and 2.84 injured. The average casualties per accident were for the month 0.261 killed and 0.891 injured; for the year, 0.312 killed and 1.060 injured.

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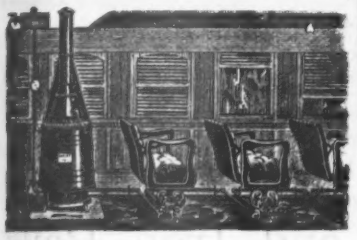

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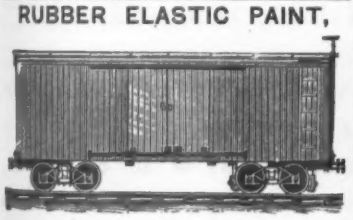

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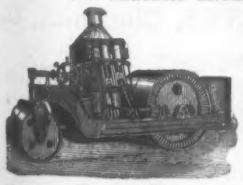

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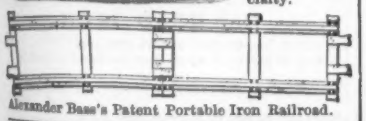

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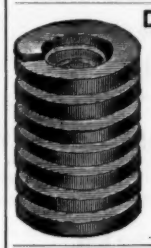

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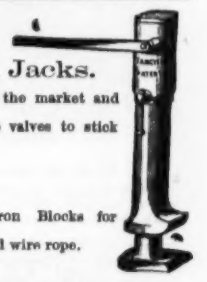

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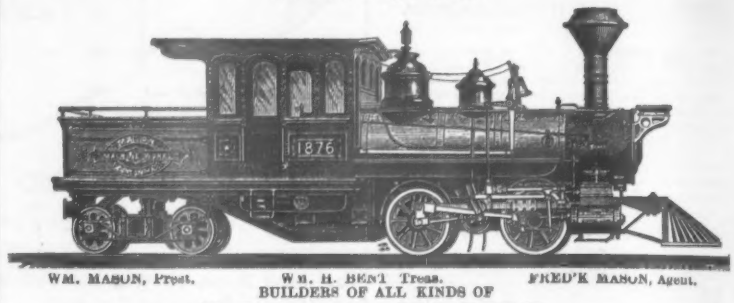

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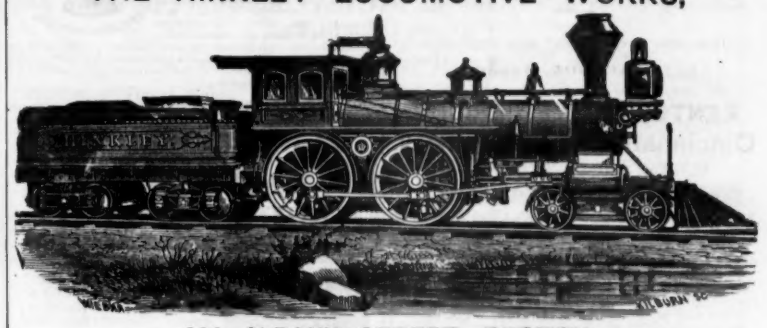

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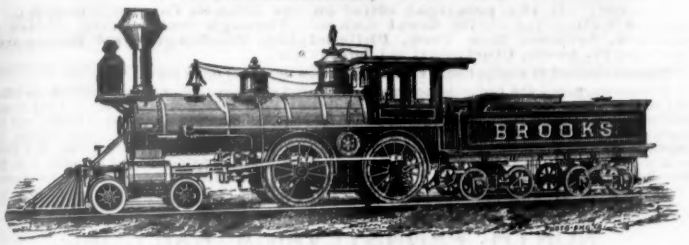

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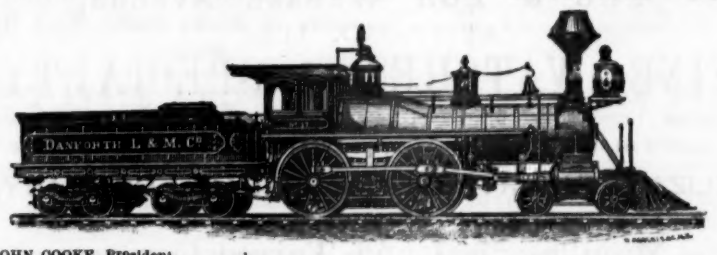

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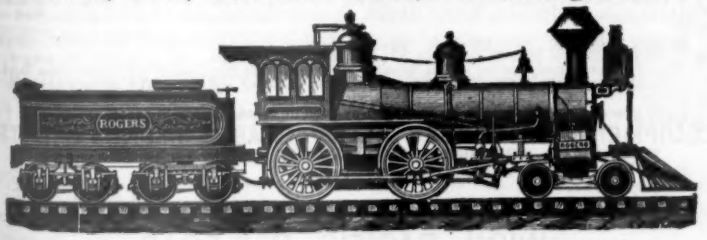

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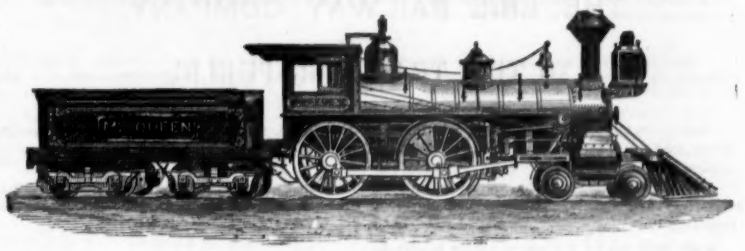

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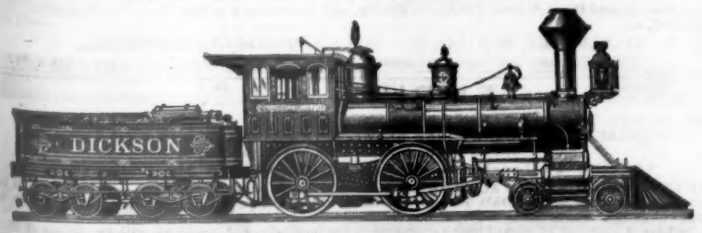

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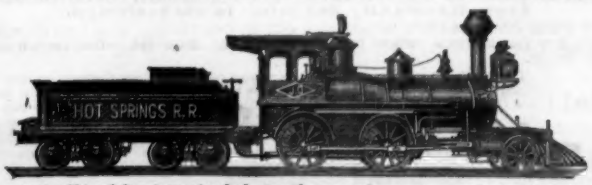

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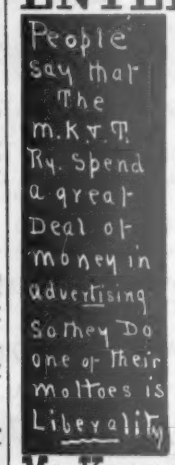

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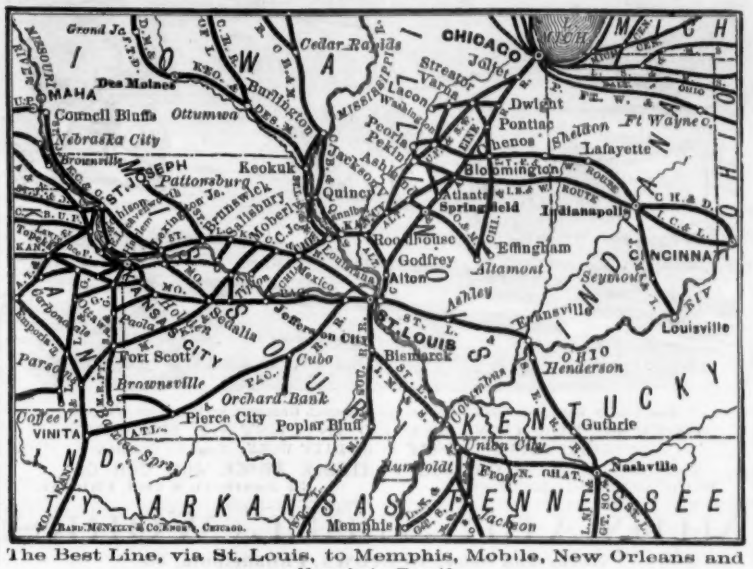

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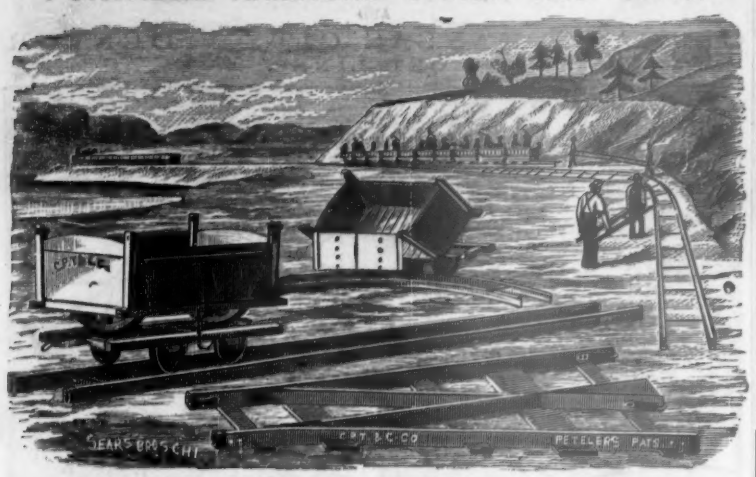

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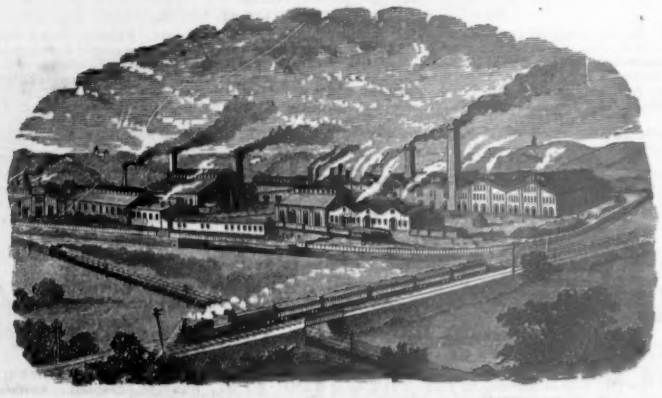

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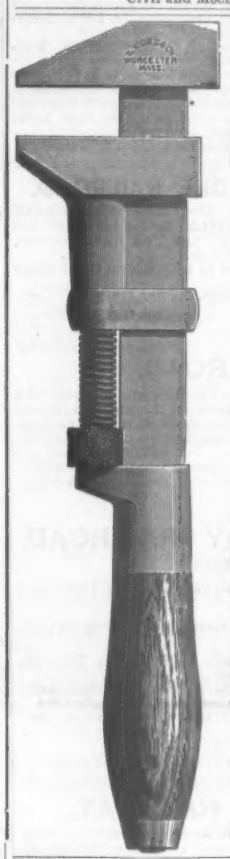

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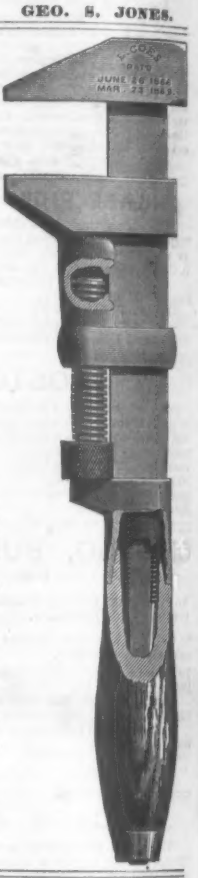

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